

Official Comprehensive Plan

Conewago Township Adams County, PA

Adopted: April 21, 2008



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ACKNOWLEDGEMENTS

The consultant for this project would like to acknowledge those members of the Study Committee who contributed to and oversaw the preparation of this Plan:

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All maps and aerials presented within this Plan rely upon digital information of the Adams County Geographic Information System. While the accuracy of this information is believed to be very high, it should only be used for community planning purposes and cannot be relied upon for definitive site survey delineation.

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I. Introduction

A. PURPOSE OF THE PLAN

Healthy, attractive and economically-sound communities do not “just happen.” They are created through vision and foresight and grow and change successfully with the same. Today, local governments are responsible for guiding growth and development within communities, for setting aside open spaces, and for delivering public services. Like any business, local governments need to chart future plans so that they can assure the efficient use of resources. The preparation of a comprehensive plan provides a deliberate framework of information that can be used to make future decisions regarding local government functions. The Comprehensive Plan further provides a sound legal basis for specific implementing measures, such as zoning and subdivision regulations designed to carry out the intent of the Comprehensive Plan.

Comprehensive Planning:
“the allocation of municipal resources
towards local goals and objectives.”

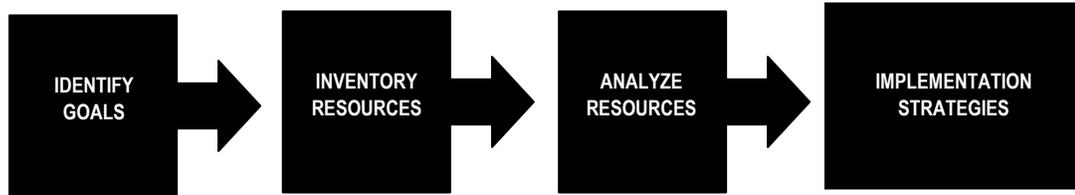
The Conewago Township Comprehensive Plan represents the work of many people. Local elected officials, planning commission members and other appointed citizens oversaw the preparation of the Plan by reviewing the plan content and conducting monthly public meetings. The Plan also sought specific input from various local, County and State officials and staff regarding the Township’s resources and possible programs available to implement the Plan’s findings. Finally, the Plan incorporates the many public comments received during the planning process.

This Comprehensive Plan first sets forth a set of Community Planning Goals. These goals include broad objectives, such as the provision of adequate housing and employment opportunities, the protection of the environment, and the provision of a balance of public services. They also seek to correct existing or foreseeable deficiencies or problems, such as improving the design of a particular road intersection or reducing localized flooding through improved storm water management.

Next, this Plan inventories, maps and describes the Township’s resources over several chapters. These resources include many features, such as land, streams, roads, utilities, parks, housing, schools, police and fire service, businesses, and so on. Analyses are performed within each of the Plan’s chapters to determine their capabilities in meeting the desired future. Each chapter makes specific recommendations to improve the capabilities of these in attaining locally-expressed planning goals.

Then, the analyses of resources and recommendations are used together with the Community Planning Goals to develop a future land use scenario and a plan for the future delivery of public and other services. The time-frame for this Comprehensive Plan is to the year 2020; all recommendations made within this Plan are structured around this time period.

Finally, implementation strategies are discussed and recommended that will enable the Township to set in motion the goals, objectives and recommendations identified in the Plan. In the end, any planning process is meaningless unless its recommendations find application as part of the Township's business—the protection of public welfare and the delivery of public services.



B. MPC REQUIREMENTS

Pennsylvania's Constitution gives the General Assembly the power to enact laws that protect the public health, safety and general welfare of its citizens. The General Assembly has, in turn, given local municipalities primary responsibility for community comprehensive planning. Municipalities in Pennsylvania are empowered by the Pennsylvania Municipalities Planning Code (MPC), Act 247 of 1968, to prepare and adopt comprehensive plans according to specified requirements and procedures. Revisions to the MPC made by Act 170 of 1988 expanded the subject matter and goals of comprehensive planning to enable municipalities to manage growth more effectively, and to provide greater protection for environmentally sensitive lands and important historic and cultural sites. Furthermore, Act 170 also requires that all counties in Pennsylvania prepare and adopt comprehensive plans and that municipal plans be generally consistent with the adopted county plans. Municipalities are also empowered by this Act to carry out joint planning with one another. Finally, the most recent amendments to the MPC specifically enable municipalities to work together and develop regional plans for the allocation of growth and development, along with the delivery of public facilities and services.

These MPC standards are the foundation upon which the Comprehensive Plan for Conewago Township is built. This Plan, therefore, is born not only out of a belief that sound planning is the key to a healthy, attractive and economically sound community, but also out of a respect and regard for the laws of the Commonwealth of Pennsylvania.

C. HOW TO USE THIS PLAN

This Comprehensive Plan is designed to serve several important purposes. Principally, the Plan is intended to share with Township residents a vision for the future. Secondly, it is designed to assist the Township in the administration of land use planning programs. A detailed table of contents appears at the beginning of the text that provides quick reference to the appropriate sections of the Plan. **Action-oriented recommendations within each of the Plan's chapters are printed in bold, italicized letters so that the decision-maker's attention is immediately drawn to them.** Many of these recommendations tie in to specific implementation strategies discussed in the Plan's final chapter.

The numerous maps within the Plan have been carefully prepared so that the information can be easily visualized and is meaningful. Related features are composited together so that the reader gains a better understanding of their connection. The many analyses utilized

throughout the study are intended to maximize the utility of the findings. Step-by-step descriptions of these methodologies are furnished to enable the reader to gain a better understanding of the issues and their planning implications. All of these features will aid local decision-makers in their evaluation of future planning proposals. Data used to compile the maps in this Plan was largely furnished by the Adams County Geographic Information System (GIS). Therefore the data is readily consistent with the County's database and new layers of data created by this Plan are similarly compatible with the County's system.

An additional function of this Plan is its collection of important information. The term *Comprehensive Plan* accurately describes the composition of this report; its contents are quite comprehensive. Accordingly, the Plan provides convenient access to a wealth of up-to-date factual information concerning the Township's resources. This information will not only serve local officials, but also service agencies, property owners, residents, business leaders, and prospective developers. The inventories of existing conditions will also provide the groundwork upon which future Plan updates can be more easily accomplished.

Finally, the Plan provides a future land use scenario that can be useful to many landowners. For example, residents can get an idea of the land uses that are projected around their homes. Prospective developers can use the Plan to package development proposals that conform to the municipal goals, thereby ensuring a smooth development review process. Business leaders can glean a sense of secure investment climate from the Township's future land use scenario. In all, the Plan considers many competing interests and devises a strategy to assure their relative harmonious coexistence. It is hoped that the Plan will become a powerful and practical tool in local decision-making. ***It is important for all persons involved and/or interested in the future of the Conewago Township to read and understand this Plan. Local decision-makers should keep the Plan handy when evaluating future development proposals, service adjustments or public investments.***

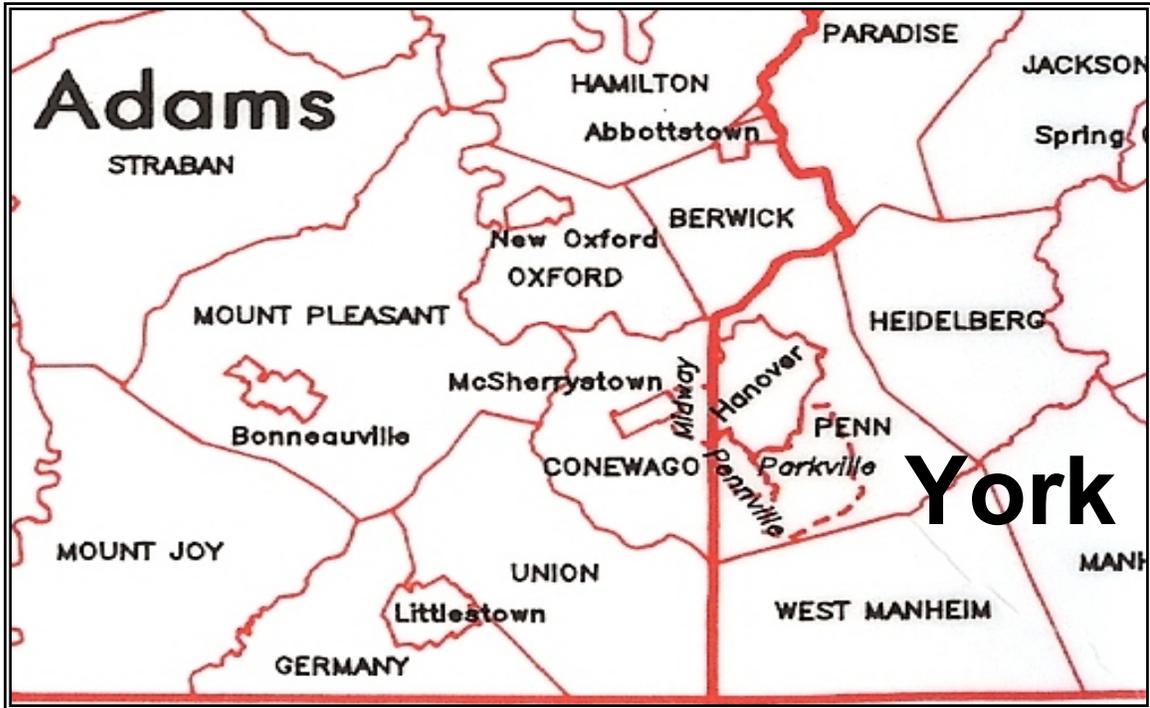
D. REGIONAL SETTING

Conewago Township is situated in the southeastern portion of Adams County in south central Pennsylvania. The Township also directly adjoins York County and Hanover Borough to the east which has strongly influenced development activities in recent decades. The Township has an irregular shape that has an east-to-west width of almost 3.1 miles and a north-to-south length of nearly 4.9 miles. Conewago Township contains a total of approximately 10.5 square miles with some 6,720± acres.

At its closest point, the Township is about 8.6 miles east of the Borough of Gettysburg, the Adams County seat. Serving as a "hub," Gettysburg's position led to development in outlying areas in a spoke-like pattern. An extensive road system formed, linking the outlying municipalities like Conewago to Gettysburg via Rt. 116. But Hanover too has strongly influenced eastern Adams County and especially Conewago Township. Hanover's numerous industries and businesses provide ready access to jobs and goods and services for Township residents. Finally, the Township is a few miles from the Maryland border. Many residents within the Township commute to work in Maryland and recent planning policies within Maryland have caused a migration of resident into Adams County and Conewago Township.

The eastern boundary of the Township is formed by the man-made line separating Adams and York Counties. The northern boundary of the Township is formed by the

Little Conewago Creek while the western and southern boundaries follow the South Branch of the Conewago Creek. To the north of the Township lies Oxford Township in Adams County. To the east is Penn Township, York County which is bisected by Hanover Borough (York County). Directly to the south and southwest lie Union Township and to the northwest is Mount Pleasant Township, both in Adams County.



II. Planning Goals & Objectives

A. OVERVIEW

These Goals and Objectives relate to a 10 to 15 year vision for Conewago Township. Changes to land use and the pattern of development in the Township through the year 2020 should be guided by these statements of policy and preference. These statements also serve as the “community development objectives” for the Zoning Ordinance, as required by the Pennsylvania Municipalities Planning Code (MPC), Act 247, as Amended.

The Goals, Objectives and Strategies were drafted during Public Workshops held during 2006 and 2007.

The Goals are general statements that reflect what Conewago Township envisions relative to the major elements of a Comprehensive Plan as required by the MPC, including: land use (residential, industrial, commercial, agricultural, recreational); transportation; utilities; community facilities; and the preservation of prime agricultural lands, floodplains and other areas.

The Objectives and Strategies are aimed at addressing each of the goals, either as an element of the Comprehensive Plan, or as an implementation measure. Collectively, the objectives and strategies are meant as a list of “action items” to be addressed as part of the planning process of the Township over the next several years.

The 10 Goals of this Comprehensive Plan are:

- Goal 1: Maintain a Balanced Pattern of Development
- Goal 2: Minimize the Sprawling Effect of Development
- Goal 3: Protect and Conserve Natural Features and Resources
- Goal 4: Maintain and Enhance Transportation/Circulation Systems
- Goal 5: Maintain and Upgrade Utility Systems
- Goal 6: Provide for Needed Land Uses
- Goal 7: Provide for Needed Community Facilities
- Goal 8: Promote a Diversity and Rehabilitation of Housing Types
- Goal 9: Maintain Sound Fiscal Policies and Programs
- Goal 10: Continue Participation in Regional Planning

These Goals are clarified on the following pages, with Objectives and Strategies for each.

GOAL 1: MAINTAIN A BALANCED PATTERN OF DEVELOPMENT

Objective and Strategies:

1. Continue to maintain a character of developed areas in compact arrangements, with farmland and natural areas serving as separators.
2. Promote development toward existing developed areas and lands designated for development to help with the safeguarding of farmlands and undeveloped areas.

3. Concentrate development around and adjacent to the Boroughs and existing neighborhoods such as:
 - the Borough of Hanover
 - the Borough of McSherrystown
 - Midway
 - Diller Village
 - Edgegrove
 - Brushtown, and
 - Mt. Pleasant
4. Strive to keep the Hanover Shoe Farm and the Conewago Chapel Basilica properties as significant scenic and agricultural amenities, to aid in the balancing of the developed/undeveloped character of the Township.
5. Strive to maintain the other prime agricultural lands, in order to promote the visual and spatial relief between developed and undeveloped areas.
6. Promote “in-fill” development in existing areas of settlement and community to reinforce and add value to existing neighborhoods.
7. Encourage “in-fill” development in existing areas of settlement and community by minimizing ordinance restrictions to enhance the appeal of “infill.”
8. Promote re-use of existing properties and buildings to prevent impervious encroachment into pervious lands.
9. Encourage cluster development to preserve open space.
10. Control the expansion and extension of utilities infrastructure with a view toward continuing a balanced pattern of development.
11. Encourage and support studies for determining the sustainability of water resources and its associated infrastructure from increasing development.

GOAL 2: MINIMIZE THE SPRAWLING EFFECT OF DEVELOPMENT

Objective and Strategies:

1. Limit growth areas with the creation and implementation of urban growth boundaries to avoid a suburban sprawl pattern of development by creating boundaries to the expansion of existing neighborhoods and subdivisions.
2. Promote development around and adjacent to the Boroughs and existing neighborhoods such as:
 - the Boroughs of Hanover and McSherrystown
 - Midway and Diller Village
 - Edgegrove
 - Brushtown, and
 - Mt. Pleasant

3. Promote more R-2 development in the form of a Traditional Neighborhood Development (TND) with smaller lots, sidewalks, front porches, street/shade trees, on-street parking, and detached garages in rear yards.
4. Encourage the mixing of compatible uses, walkable communities and conserving open space by promoting Traditional Neighborhood Development.
5. Require tree plantings, hedgerows, hedges, buffer plantings, and other natural landscape treatment to screen the effects of existing sprawl-like subdivisions such as: Granny Estates, Conewago Drive, Plum Run View, Conewago Estates and Sherry Village.
6. Implement Transfer Development Rights (TDR) as a way of protecting farmlands by encouraging urban development in areas dedicated for residential and commercial development.
7. Promote cluster and TND development as a means of creating a more compact arrangement for future housing and as a means of defining open space around and on the perimeter of new neighborhoods.
8. Revise zoning district boundaries and development density to promote a more compact form of development.
9. Institute strict zoning regulations on agricultural lands to make the residential development process more difficult.

GOAL 3: PROTECT AND CONSERVE NATURAL AND HISTORICAL FEATURES AND RESOURCES

Objective and Strategies:

1. Create an open space and recreational network along streams, especially Conewago Creek and Plum Creek.
2. Encourage TND and cluster development as a means of preserving woodlands, wetlands, wet and hydric soils, floodplains, steep slopes and scenic areas.
3. Conserve prime agricultural lands, especially those with prime agricultural soils, and those of the Hanover Shoe Farms and the Conewago Chapel Basilica.
4. Strengthen ordinance provisions related to the protection of land and water resources.
5. Promote forward thinking in the approach of protecting our water resources by utilizing new methods and technologies in stormwater collection, control and management.
6. Limit the removal of existing woodlands, especially due to the fact that little woodland remains in Conewago Township.
7. Require the replacement of large trees, which are removed during land development, with smaller trees in effort to promote reforestation.
8. Limit development in areas of carbonate geologic constraint.

9. Require mitigation of the adverse environmental effects of land development through the restoration of natural landscapes.
10. Implement new zoning district overlays such as “natural resource conservation area” and “riparian buffers” to protect environmentally sensitive areas such as steep slopes, wetlands, floodplains/floodways, prime agricultural soils, wooded areas, carbonate geologic areas, streams, etc.
11. Protect the attractiveness of undeveloped areas from the debilitating effects of development as a means of maintaining the natural and scenic character of the Township.
12. Create an EAC (Environmental Advisory Council).

GOAL 4: MAINTAIN AND ENHANCE TRANSPORTATION/CIRCULATION SYSTEMS

Objective and Strategies:

1. Improve traffic controls at critical intersections and along main transportation routes, especially along Route 116 and Route 194.
2. Implement studies to determine how to relieve congestion and promote the enhancement of failing and below-par road intersections.
3. Remedy dangerous traffic intersections with primary attention to the intersections of Mount Pleasant Road and Route 194; Sunday Drive, Racehorse Road and Route 116; and Oxford Avenue, Elm Avenue, Route 116 and Third Street.
4. Promote “traffic calming” and other traffic managing techniques and methods.
5. Consider broadening the geographic area for the study relating to extension of Eisenhower Drive.
6. Participate in the review of Eisenhower Drive and look into alternate routes which may be in the best interest of the township as a whole.
7. Promote a system of through-streets, versus cul-de-sac streets, as a means of encouraging a dispersal of vehicular traffic.
8. Construct sidewalks within new residential developments and as an extension from areas with existing sidewalks, and to connect neighborhoods with nearby including nonresidential activity areas (e.g. schools, businesses and industries.)
9. Promote sidewalk connectivity between and within all residential developments.
10. Establish buffers around roadways adjacent to residential areas to control noise, vibration and pollution.
11. Establish vehicle noise ordinances, such as brake retarder legislation, within and around residential areas.
12. Establish a greenway/pathway system along Conewago Creek.

13. Maintain liaison with Adams County officials and PennDOT in an effort to coordinate transportation improvement projects.
14. Study effectiveness of impact fees and implement if in the best interest of the township.
15. Promote various methods of public transportation.
16. Incorporate "Access Management" recommendations into the Township's Ordinances.

GOAL 5: MAINTAIN AND UPGRADE UTILITY SYSTEMS

Objective and Strategies:

1. Expand public water to presently unserved areas, in conjunction with a plan for the control of the spread of development to selected areas of the Township.
2. Expand public sewer to presently unsewered areas, in conjunction with a plan for the control of the spread of development to selected areas of the Township.
3. Establish an urban growth boundary to direct residential and commercial development and ensure the extension of public water and sewer utilities are within this boundary.
4. Coordinate utility line extensions with the Borough of Hanover.
5. Attempt to remedy existing malfunctioning sewage systems.
6. Upgrade the Hanover Regional Sewer Plant as needed.
7. Consider alternative utility systems for the betterment of the Township.

GOAL 6: PROVIDE FOR NEEDED LAND USES

Objective and Strategies:

1. Provide for a variety of housing types including: single-family, two-family, multi-family in various arrangements, and mobile homes/mobile home parks.
2. Promote a diversity of mixed uses to serve neighborhoods and the overall needs of the township.
3. Provide affordable housing for all age ranges.
4. Consider tax incentives and other county, state and federal programs to enable the construction of different housing types for all ages and all income levels.
5. Allow for the growth and expansion of industrial and commercial development to provide additional employment opportunities and tax base.
6. Encourage the re-development of existing and built properties.

7. Recruit commercial and industrial businesses and find means to enhance the township's appeal for commercial and industrial businesses to establish within the township (i.e. tax incentive programs).
8. Relax the land use regulations to enable in-fill and re-development of vacant commercial and industrial properties and buildings.
9. Provide one large, centrally located, neighborhood park to address the recreational needs of township residents.
10. Create an account and investigate grants and funding for the purchasing of lands.
11. Form a Recreation Task Force to generate and implement creative ideas on establishing recreation parks within the Township.

GOAL 7: PROVIDE FOR NEEDED COMMUNITY FACILITIES

Objective and Strategies:

1. Continue to provide support to the local volunteer fire companies.
2. Evaluate the feasibility of integrating municipal services in order to promote them on a more cost effective basis, such as police protection.
3. Continue to support and rely upon regional facilities in terms of hospitals, health care and emergency services.
4. Continue to support and rely upon school district facilities and programs.
5. Provide one large, centrally located, neighborhood park to address the recreational needs of township residents.

GOAL 8: PROMOTE A DIVERSITY AND REHABILITATION OF HOUSING TYPES

Objective and Strategies:

1. Promote a diversity of housing types including forms of housing such as single-family detached, two-family detached and semi-detached, and multi-family in various arrangements.
2. Provide for opportunities for mobile home park development as required by State law.
3. Promote for more R-2 type development in the form of a Traditional Neighborhood Development (TND) featuring: smaller lots, sidewalks, front porches, street/shade trees, private detached garages in rear yards, on-street parking, and mixed/compatible commercial and civic uses to "anchor" the neighborhood.
4. Promote more affordable housing through a TND approach to residential development.
5. Allow for more R-2 type development with greater mixed use opportunities.

6. Improve ordinance standards and regulations (zoning and subdivision/land development) which relate to the planning and design of housing developments.
7. Investigate programs to promote the enhancement of properties (property maintenance regulations). Investigate grant programs, such as block grants and Main Street grants, and other means of assisting in the rehabilitation of properties (property maintenance and zoning) in areas such as Midway. Find assistance for existing housing areas to renovate/rehabilitate properties to “brighten” the community and establish an inviting appeal.
8. Evaluate the need for retirement community housing.
9. Encourage TND and cluster development as a means of preserving open space.
10. Provide a bonus for clustering to allow an increase in density, over “by-right” zoning to provide for more land designated as open space.
11. Promote the rehabilitation of housing, especially in the Midway section of the Township.

GOAL 9: MAINTAIN SOUND FISCAL POLICIES AND PROGRAMS

Objective and Strategies:

1. Continue to exercise sound fiscal budgeting and expenditures.
2. Diversify the tax base by providing additional opportunities for industrial and commercial/business use.
3. Promote commercial and industrial uses by utilizing county, state and federal resources for the education of business owners to know opportunities exist in the Township for the location of their businesses.
4. Attempt to obtain open space land through the land development process, at no purchase cost to the Township.
5. Maintain the recreational “fee-in-lieu” program, whereby the developer of subdivisions/land developments provide a fee to the Township for the purpose of constructing park improvements or for acquiring land for park and recreational purposes, in accordance with State law allowing the same. Consider “fee-in-lieu” to be consistent with market standards.

GOAL 10: CONTINUE PARTICIPATION IN REGIONAL PLANNING

Objective and Strategies:

1. Maintain liaison with the Adams County Planning Commission and other relevant and related groups and entities in an effort to coordinate planning from a broader perspective.
2. Continue participation with regional transportation planning as a means of improving the local/regional road network.

III. Natural & Cultural Features

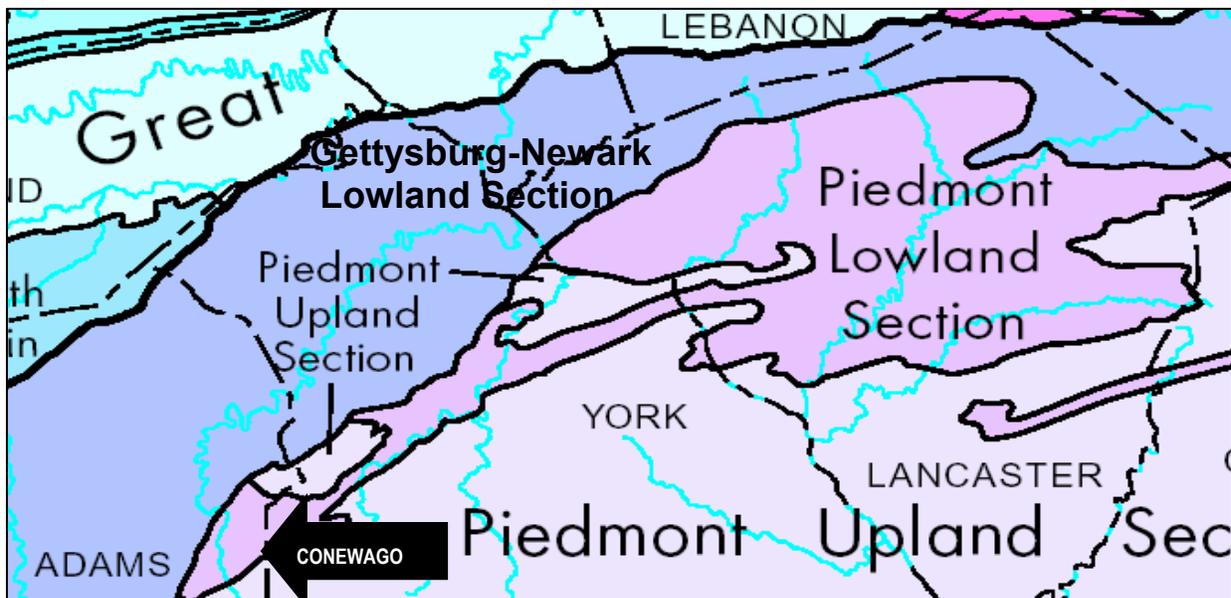
This chapter will describe and map Conewago Township's natural and cultural resources. This information is extremely useful in allocating future land uses within the Township, as well as in formulating policies and implementing measures that protect these natural and cultural resources. Much of the information contained within this Section has been derived and/or updated from the former Township Comprehensive Plan adopted in 1989.

A. PHYSIOGRAPHY

Physiographic regions are areas that are broadly categorized based on terrain texture, rock type, and geologic structure and history. Unlike most of Adams County which sets within the Gettysburg – Newark Lowland Section, Conewago Township is located within the Piedmont Lowland Section of the Piedmont Province.

The Piedmont Lowland Section consists of broad, moderately dissected valleys separated by broad low hills. The Section is developed primarily on limestone and dolomite rock. Karst topography is common. Local relief in the Section is generally less than 100 feet, but may be as much as 300 feet. Elevations in the Section range from 60 feet to 700 feet. Drainage is basically dendritic in pattern, but some areas have virtually no pattern because of the well developed subsurface drainage.

The Section occurs mainly in Lancaster County, but parts of it are also in Adams, York, Berks, Chester, and Montgomery Counties. The Section can be viewed along many roads. Outstanding Scenic Geologic Features in the Section include: Donegal Spring, Fruitville Quarry Fossil Site, Getz Farm Fossil Locality, Indian rock, Lititz Springs, and Rheems Quarry. There are no State Parks or State Forest Natural Areas or Picnic Areas in the Section.¹



B. GEOLOGY

The geology of an area plays an important role in determining the surficial shape of the environment. Throughout the ages, underlying rock is subjected to natural weathering forces that chemically and physically erode its original shape. The physical properties of underlying rock determine its strength and suitability to support development, including the ease of excavation, and ability to support the foundations of various structural types and availability of groundwater. In addition, the geology offers valuable mineral deposits that can be the source of commercial enterprise and construction materials.

GEOLOGIC FORMATIONS

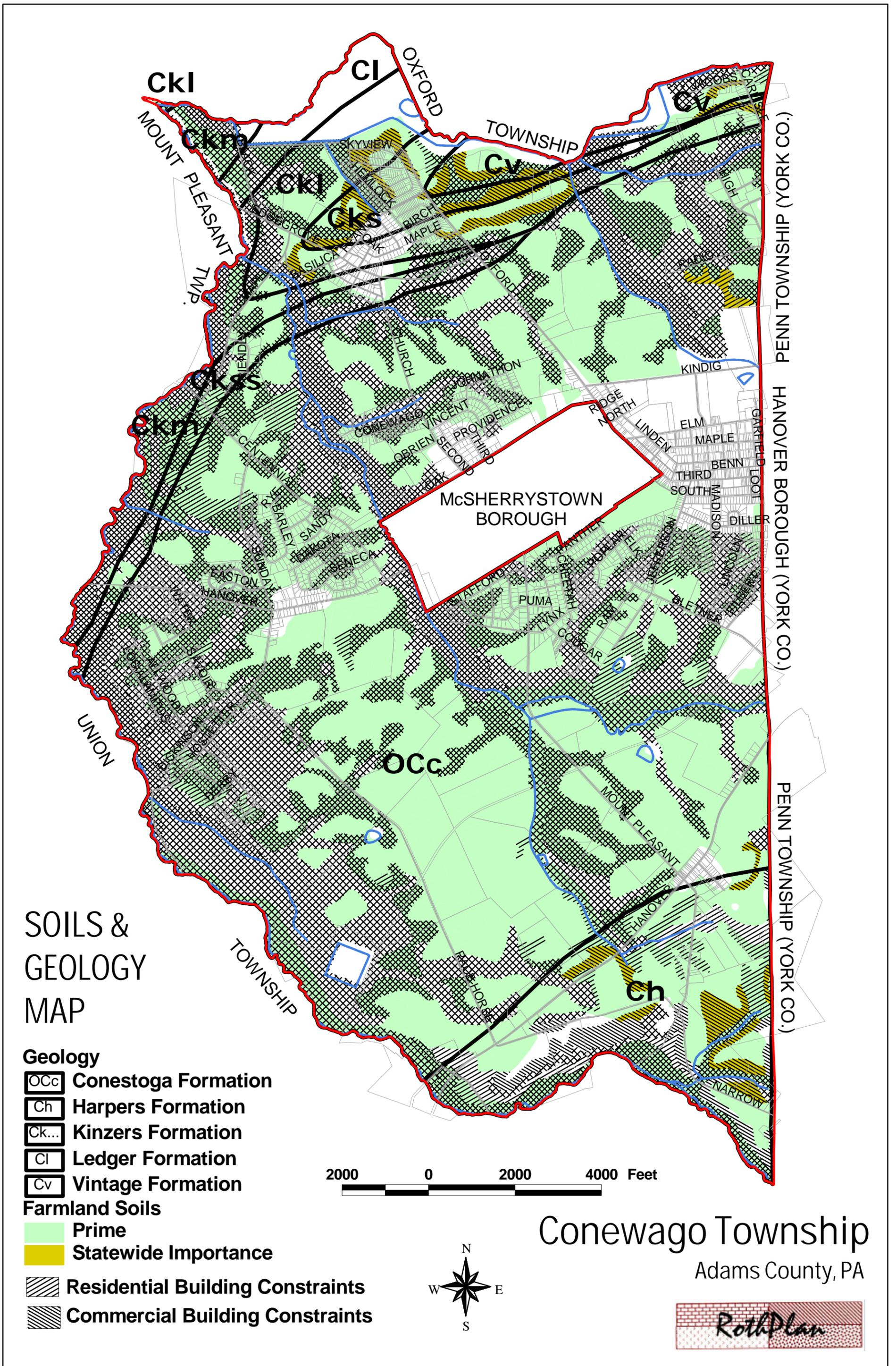
The *Soils and Geology Map* illustrates the geologic conditions within the Township. Approximately three-quarters of Township sets upon carbonate geology. Specifically, the Conestoga (OCc) formation dominates the center of the Township. Smaller areas of the Ledger (Cl) and Vintage (Cv) carbonate formations straddle the northern border with Oxford township amid a larger band of the shales of the Knizers Formation (Ckl, Ckm, Cks and Ckss).

The southern tip of the Township includes the Harpers Formation (Ch) which is characterized by mica and schists with abundant quartz boulders.

The following describes each formation along with its engineering characteristics as reported in *Engineering Characteristics of the Rocks of Pennsylvania* (Harrisburg, PA: Pennsylvania Geologic Survey, 1982) Alan R. Geyer and J. Peter Wilshusen.

ENGINEERING CHARACTERISTICS OF GEOLOGIC FORMATIONS					
Formation Name (composition)	Symbol	Porosity & Permeability	Groundwater	Ease of Excavation	Foundation Stability
CONESTOGA FORMATION Medium-gray impure limestone having black, graphitic shale partings; conglomeratic at base. Total thickness is unknown but is at least 3000 feet thick.	OCc	Joint and some solution-channel openings provide a secondary porosity of low magnitude. Moderate to low permeability.	Median yield is 25 gal./min.; some wells encounter solution openings for very large yields; water may be very hard.	Difficult; bedrock pinnacles and numerous quartz veins are special problems. Fast drilling rates; quartz veins slow the drilling rate.	Good; however, thorough investigation for possible collapse areas should be undertaken.
HARPERS FORMATION Dark greenish gray phyllite and albite-mica schist; coarse-grained; abundant quartz; maximum thickness is about 1500 feet diabase to dark-purple to black argillite.)	Ch	Joint- and cleavage plane openings provide a secondary porosity of low magnitude; low permeability.	Median yield is 24 gal./min. Yields usually obtained from the fractures, weathered zone at the top of the bedrock. Water is mostly soft and of good quality. Iron may be a problem.	Weathered zone is moderately easy to excavate. Unweathered rock is difficult. Quartz boulders are a special problem. Fast to moderate drilling rate.	Good; should be excavated to sound material.

¹ <http://www.dcnr.state.pa.us/topogeo/map13/13pus.aspx>, Jan. 4, 2005.



SOILS & GEOLOGY MAP

Geology

- OCc** Conestoga Formation
- Ch** Harpers Formation
- CK...** Kinzers Formation
- CI** Ledger Formation
- Cv** Vintage Formation

Farmland Soils

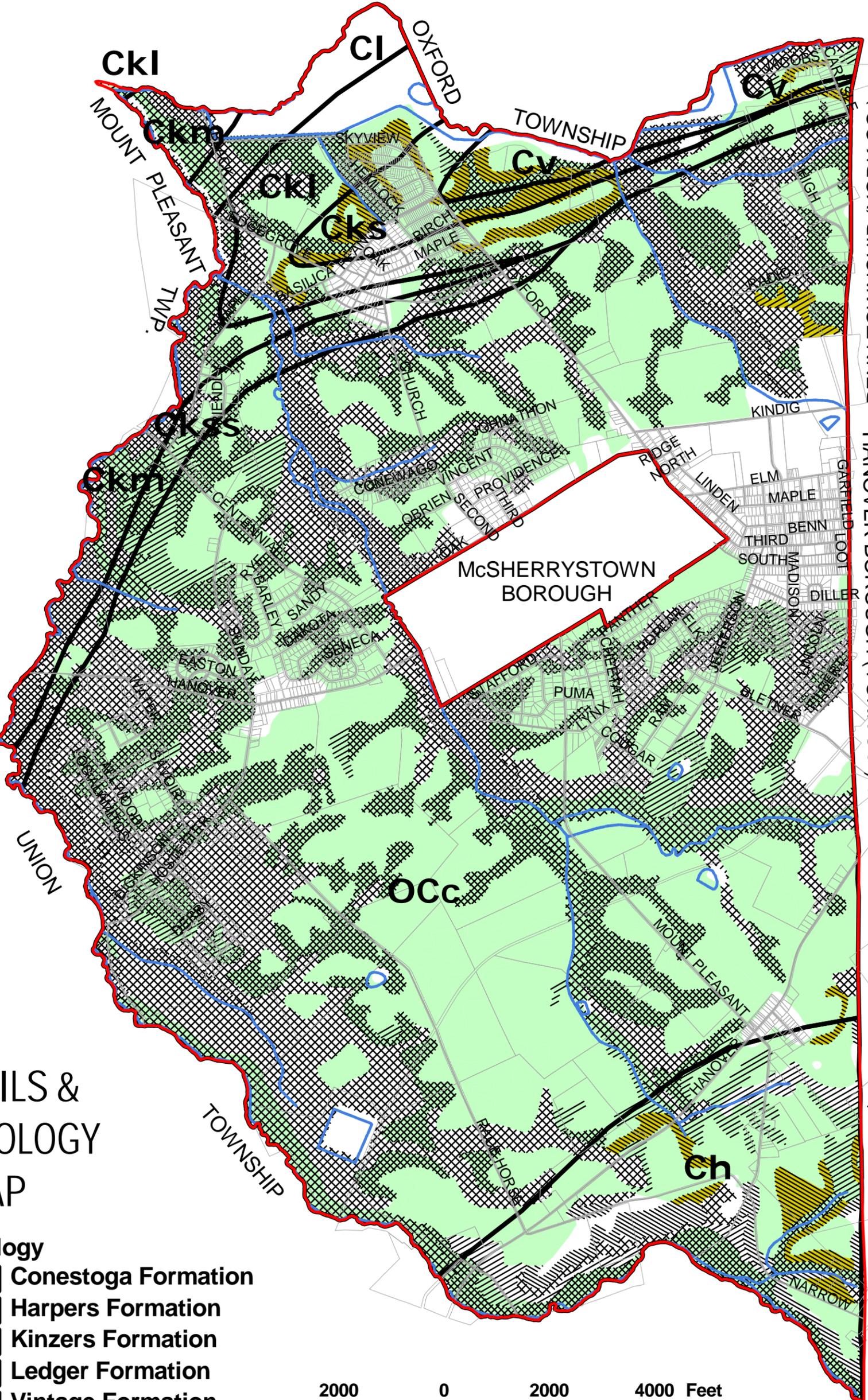
- Prime**
- Statewide Importance**

- Residential Building Constraints**
- Commercial Building Constraints**



Conewago Township

Adams County, PA



ENGINEERING CHARACTERISTICS OF GEOLOGIC FORMATIONS					
Formation Name (composition)	Symbol	Porosity & Permeability	Groundwater	Ease of Excavation	Foundation Stability
KINZERS FORMATION Dark-brown shale; contains trilobite Olenellus. 150 feet thick.	Ckl, Ckm, Cks, Ckss	Joint- and cleavage plane openings provide a secondary porosity of moderate magnitude; moderate permeability.	Median yield is 30 gal/min. Well yields range from less than 1 to 400 gal/min.	Moderately easy to excavate. Unweathered rock is difficult. Quartz boulders are a special problem. Moderate drilling rate.	Good; should be excavated to sound material.
LEDGER FORMATION Light-gray, locally mottled, massive, pure coarsely crystalline dolomite; siliceous in middle part. Beds weather to rust-stained, granular cherty layers. Approximately 2000 feet thick.	Cl	Joint and bedding plane openings and solution channels provide secondary porosity of low to high magnitude. Low to high permeability.	Median yield is 30 gal/min. Well yields range from less than 1 to 400 gals/min. 82 percent of wells tested had yields greater than 25 gals/min.	Difficult; bedrock pinnacles are a special problem. Fast drilling rates.	Good however, solution channels and bedrock pinnacles should be thoroughly investigated.
VINTAGE FORMATION Dar-gray, knotty, argillaceous dolomite having impure, light gray, marble at the base. Maximum thickness is 650 feet.	Cv	Joint and solution channel openings provide secondary porosity of moderate magnitude. Low permeability.	Median yield is 30 gal/min. Water is relatively hard.	Difficult; bedrock pinnacles are a special problem. Fast drilling rates	Good however, solution cavities and bedrock pinnacles should be thoroughly investigated
<i>Source - Engineering Characteristics of the Rocks of Pennsylvania (Harrisburg, PA: Pennsylvania Geologic Survey, 1982) Alan R. Geyer and J. Peter Wilshusen.</i>					

Summary - From this analysis, several important land use implications can be derived. The Townships geologic formations are characterized by features that can support at least rural forms of development. First, each formation produces median groundwater yields that exceed the rule-of-thumb 5 gallons per minute (gpm) standard needed for domestic well supplies. Next, all formations exhibit sufficient strength to support building foundations; however, the carbonate formations are susceptible to solution channels and cavities along with bedrock pinnacles. Actual excavation ease ranges from difficult again in carbonate formations to moderately easy elsewhere.

GROUNDWATER SUPPLY

Geology is also a primary determinant of groundwater quality and quantity. Groundwater is surface water that has seeped into and is contained by underground geological formations called aquifers. Water stored in aquifers is sometimes released to the surface through springs or can be pumped to the surface through wells. Groundwater aquifers are part of an interconnected network that includes surface waters, such as streams, ponds, wetlands, and lakes. Aquifers regulate the levels and flow rates of these surface waters by collecting and retaining water reaching the ground and gradually releasing it during dry periods.

Some of the primary geological determinants of groundwater quality and quantity are the type, structure, permeability, porosity, and chemical composition of the bedrock formations present in the area. An understanding of local groundwater conditions is necessary to (1) plan for future public sewer and water needs, (2) allocate future land uses so as to protect important groundwater recharge areas, and (3) protect existing and potential future groundwater sources from contamination.

A typical household with three family members requires an average flow of 0.2 to 0.4 gpm with a peak rate of use ranging between 3 and 5 gpm. Therefore, the Township's geologic formation's rather uniform median yields of 24 to 30 gpm can adequately accommodate a sparsely-developed rural land use pattern.

It is noted that the Hanover Borough Water Department's Well Nos. 4 & 5 are located within Conewago Township and can produce up to 4 million gallons per day (MGD). The Township may want to consider working with the Borough in developing wellhead protection strategies to protect these sources of public drinking water. ***Wellhead and springhead protection is a particularly sound investment because protection is more effective and less expensive than cleaning a contaminated groundwater source, which may cost 30-40 times more than initial protection. The following presents a brief synopsis of the five initial steps of the planning process needed to undertake a wellhead protection program as presented in the Wellhead Protection Plan (Adams County Planning Commission):***

- (1) **Form a Water Planning Team** of local officials, citizens, and interested experts who are interested in a successful wellhead protection program and can commit the time to assist in the work involved. Then establish a regular meeting schedule:
- (2) **Define the land area to be protected** - A wellhead is defined as an area above or below grade that contributes water to, and could potentially contaminate a water supply. Wellhead protection areas should be delineated by a professional geologist at the outset. A water supplier may use its own municipal engineer or retain a qualified consultant for this work. Not all public groundwater sources warrant a wellhead protection program. That is a decision that should be made based on several factors: feasibility of protecting the recharge area, influence of surface water on the water supply, existence of a filtration plant, possible interconnection to buy water from another system, or designation of the water source as a sole-source aquifer. Within Pennsylvania wellheads are generally divided among three different zones:

Zone I is a 100 to 400 foot radius immediately surrounding a well or spring in which no development should be permitted. Activities in this area generally pose the greatest risk to groundwater because of the short distance (and correspondingly short travel time) that contamination must travel to reach the well.

Zone II is a larger area from which the groundwater is pulled into a well by pumping. Generally, the harder a well is pumped, the further out the water is drawn from. Because springs are not pumped, a Zone II is not delineated for springs.

Zone III is the area from which any rain that falls to the surface and eventually flows into Zone II or a spring.

Not all wellhead protection programs utilize the three zone approach and local officials should tailor their

program with appropriate levels of regulation and implementation that meets local protection goals and responds to local conditions.

- (3) **Identify potential contaminate sources** - The water planning team should review the list on the next page of potential sources of groundwater contamination then specifically inventory and map such sources within their respective wellhead zones.
- (4) **Evaluate alternative tools and techniques** – Based upon results from the previous task, select from the many techniques that can be used to protect groundwater, including but not limited to those tasks listed on the bottom of the following page:
- (5) **Develop and implement a plan of action** – Using any combination of the above, prepare a plan that assigns duties and schedules completion. Then, conduct public hearings with local officials for official adoption of the plan, and ordinances or approval of resolutions needed to implement the Plan. Regularly review the status of the Plan's effectiveness and related developments within the field of wellhead protection. Conduct ongoing public education about the need for groundwater protection and possible consequences for violations. Whatever, the first step the municipality or water provider takes (either modest or comprehensive) it must have local official and community-based support to be effective.

POTENTIAL SOURCES FOR GROUNDWATER CONTAMINATION

<p>AGRICULTURE</p> <ul style="list-style-type: none"> Animal burial areas Irrigation Animal feedlots Manure storage areas Pesticide and herbicide storage areas 	<p>RESIDENTIAL</p> <ul style="list-style-type: none"> Fuel storage systems Septic systems, cesspools, water softeners Furniture and wood strippers and refinishers Sewer lines Household hazardous products Chemical applications to lawns
<p>COMMERCIAL</p> <ul style="list-style-type: none"> Airport Boat Yards Medical Institutions Paint shops Photography business Printing business Carwashes Railroad tracks Railroad yards or maintenance facility Cemeteries Research laboratories Construction areas Road deicing operations (i.e. road salt storage or use) Dry cleaning establishment Scrap and junk yards Gas station Auto Repair Shops Storage tanks and piping (either above ground or underground) Golf courses (chemical applications) Jewelry and metal plating Laundromats 	<p>INDUSTRIAL</p> <ul style="list-style-type: none"> Abandoned properties Asphalt plants Chemical manufacture, warehousing and distribution Electrical and electronic products and manufacturing Electroplaters and metal fabricators Foundries Fire Training Facilities Machine and metal working shops Manufacturing and distribution sites for cleaning supplies Quarries <ul style="list-style-type: none"> Petroleum products production, storage and distribution Pipelines (e.g. oil, gas) Septage lagoons and sludge Storage tanks (i.e. above ground, underground) Toxic and hazardous spills Wells- operational and abandoned (e.g. water supply, injection, monitoring) Wood Preserving facilities
<p>OTHER</p> <ul style="list-style-type: none"> Rifle and pistol ranges 	<p>WASTE MANAGEMENT</p> <ul style="list-style-type: none"> Hazardous waste management units (e.g. landfills, land treatment areas, surface impoundments, waste piles, incinerators, treatment tanks) Municipal incinerators Municipal landfills Municipal wastewater and sewer lines Open burning sites Recycling and reduction facilities Stormwater drains, retention basins, transfer stations

ASSORTED STRATEGIES & TECHNIQUES FOR GROUNDWATER PROTECTION

<p>Regulatory Techniques</p> <ul style="list-style-type: none"> • Overlay Zones; • Prohibited Land Uses; • Special and temporary permitting; • Performance standards; • Amortization of land uses; • Restrictive agricultural or conservation zoning; • Lot coverage regulations; • Transfer of development rights; • Staging of development; • Setbacks; • Disturbance requirements; • Conservation plans; • Stormwater management regulations; • Materials & waste handling requirements; • Fuel storage tank regulations; • Well drilling regulations; • OLDs maintenance; • Sewage planning strategies; • Nutrient management plans; • Integrated pest management 	<p>Non-Regulatory Techniques</p> <ul style="list-style-type: none"> • Emergency preparedness; • Contingency planning; • Signage; • Monitoring; • Remediation; • Land purchase; • Land donation; • Easements; • Land banking; • Comprehensive planning • Regional wellhead / watershed protection planning; • Public education; • Environmental watch groups; • Street sweeping; • Household & hazardous waste collection; • Storm drain labeling; • Sinkhole cleanup; • Streambank cleanup; • Streambank fencing & stabilization.
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Given this Plan's goals and the Township's sensitive environmental conditions, it is recommended that all existing and/or future public wellhead protection areas be reserved for low intensity rural uses with limited permitted lot coverages and woodland preservation requirements that will reduce potential impact on groundwater volumes and quality. Furthermore, any home or rural occupations should require the applicant for such uses to demonstrate the means by which he/she will properly handle materials, and dispose of any wastes, that could threaten groundwater contamination.

In addition it is recommended that the following "Best Management Practices" (BMPs) for the control of stormwater be applied to:

- 1. Minimize on-site impervious areas by preserving natural wooded cover and drainage-ways on-site.**
- 2. Utilize pervious surfaces, such as porous pavement and gravel as ways to minimize runoff.**
- 3. Minimize directly connected impervious area. Promote natural removal of pollutants using vegetation and soil. Direct impervious area runoff to pervious. For example:**
 - a. roof downspouts to lawns**
 - b. driveways to lawns**
 - c. parking areas to lawns or grassed swales**
- 4. Eliminate the opportunity for pollutants to mix with storm water runoff by:**
 - a. street sweeping**
 - b. cover chemical storage areas**
 - c. dike potential spill areas**
 - d. regular sediment removal from drainage system**
- 5. Minimize the potential for concentrating pollutants and concentrating storm water runoff by:**
 - a. utilizing grass swales and filter strips: and,**
 - b. utilizing infiltration trenches, where applicable.**

Decades ago, it was a common practice to dispose of our wastes at convenient, low points such as sinkholes and mountain gaps. Today, with better scientific information on the health effects of common chemicals, we have learned that improper waste management can have some very undesirable consequences. For example, the contents of a full 2 ½ gallon gasoline container could make the drinking water for a town of 1,000 people unfit to drink for almost two months!



Homeowners can do a number of things to protect their home water supplies:

- 1. New wells benefit from the use of casing and grout.**
- 2. Periodic water quality testing may be beneficial. Some useful tests include coliform, bacteria and nitrate-nitrogen.**
- 3. Protect water quality by being careful with chemicals and fuels near the well.**
- 4. Some of the most common problems with home water supplies come from malfunctioning septic systems. Pump your septic tank regularly, and inspect your leach bed for proper functioning.**
- 5. If you use water treatment (such as softeners or disinfection), check the treatment equipment regularly.**

C. SOILS

A soils analysis is essential to planning for future land uses, which are best located on soils that are suitable and have complementary characteristics for specific land uses. For example, agricultural land uses are usually found where soils are level, well-drained and fertile. Residential land uses are suitably located where soils are fairly level and sufficiently above bedrock and the water table. The appropriate siting of development significantly reduces the costs associated with excavating a foundation, as well as locating and designing an on-lot sewage disposal system. Finally, industrial uses favor soils that are relatively flat and sturdy so as to withstand the heavy weights associated with the operation of large plants.

The Adams County Soils Survey forms the basis of information about the Township's soils. Soils are named for a town or geographic feature near where they were originally mapped. The Township's soils have been analyzed for their suitability for farming and development purposes; these results are depicted on the *Soils and Geology Map*. The constant weathering of geologic formations produces various soil types. The capabilities and constraints exhibited by these soils are related to the geologic characteristics of the underlying rock and the local climatic conditions.

There are sixteen families of soils found within Conewago Township. The areas underlain by carbonate geology are generally characterized by Conestoga, Clarksburg and Penlaw soils with Dunning and Linside soils straddling watercourses. With the exception of the Penlaw soils, these tend to be the most fertile. The other soils are considerably smaller in land area and occur at the extreme northern and southern tips of the Township.

The following table lists the soil types and their characteristics found within Township:

SOIL CHARACTERISTICS WITHIN CONEWAGO TOWNSHIP Source:<http://websoilsurvey.nrcs.usda.gov>

Soil Symbol	Soil Name	Acres (% of Township)	Slope	Agricultural Rating ¹	Hydric ²	Soils Limitations V=Very Limited and S=Somewhat limited)			Specific Limitations ³
						Dwelling with basement	Small Commercial Buildings	Conventional on-lot sewers	
Ba	Baile silt loam	56 (0.8%)	0	-	H	V	V	V	D,P,SS,WT
CkA	Clarksburg silt loam	1101 (15.7%)	0-3	P	P	V	S	V	D,K,P,SS,WT
CkB	Clarksburg silt loam	172 (2.5%)	3-8	P	P	V	S	V	D,K,P,SL,SS,WT
Cm	Codorus silt loam	70 (1.0%)	0	P	P	V	V	V	D,FL,SL,WT
CnA	Conestoga silt loam	757 (10.7%)	0-3	P	-	-	-	S	K,P,SL
CnB	Conestoga silt loam	1515 (21.5%)	3-8	P	-	-	S	S	K,P,SL
CnC	Conestoga silt loam	120 (1.7%)	8-15	P	-	S	V	V	K,P,SL
Dy	Dunning silty clay loam	492 (7.3%)	0	S	H	V	V	V	D,FL,K,P,SL,SS
GbB	Glenelg channery silt loam	166 (2.4%)	3-8	-	-	-	S	V	D,P,SL
GbC	Glenelg channery silt loam	48 (0.7%)	8-15	P	-	S	V	V	D,P,SL
GdB	Glenville silt loam	33 (0.5%)	3-8	P	P	V	S	V	D,P,SL,WT
Lc	Lamington silt loam	0.3 (0.0%)	0	-	H	V	V	V	D,P,SL
Lw	Lindside silt loam	226 (3.2%)	0	P	P	V	V	V	D,FL,K,P
MoB	Mt Airy & Manor channery loam	26 (0.4%)	3-8	-	P	S	S	V	D,P,SL
MoC	Mt Airy & Manor channery loam	72 (1.0%)	8-15	-	P	S	V	V	D,P,SL
MoD	Mt Airy & Manor channery loam	25 (0.4%)	15-25	-	P	V	V	V	D,P,SL
Pa	Penlaw silt loam	1174 (16.8%)	0	-	-	V	V	V	D,K,P,SS
PcB	Penn silt loam	26 (0.4%)	3-8	P	-	V	S	V	D,P,SL
Pt	Quarry pits	140 (2.0%)	NA	-	-	-	-	-	-
ReB	Readington silt loam	11 (0.1%)	3-8	S	P	V	S	V	D,P,SL
Uc	Urban land	327 (4.6%)	NA	-	-	-	-	-	-
UeB	Urban land Conestoga complex	382 (5.7%)	0-8	-	-	-	-	-	-
W	Water	34 (0.5%)	NA	-	H	-	-	-	-

¹ **Agricultural ratings** – P=Prime farmland / S=Farmland of Statewide Importance

² **Hydric ratings** – H=All hydric components / P=Partially hydric components (*These soils are depicted on the Natural Features Map*)

³ **Specific Limitations** - D=Depth of soil / FL=Flooding / K=Karst conditions / P=Percolation rate / SL=Slope / SS=Shrink swell / WT=Elevated water table

PRIME FARMLANDS

Section 604.3. of the Pennsylvania Municipalities Planning Code (MPC) requires municipalities to develop zoning ordinances that “preserve prime agriculture and farmland considering topography, soil type and classification and present use.”²

The United States Department of Agriculture (USDA) rates all soil suitability for agricultural purposes and assigns a numerical rating from Class I to Class VII.

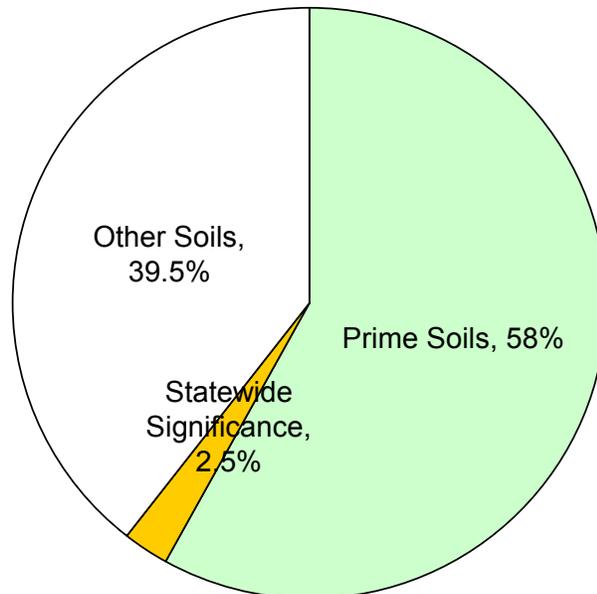
Prime farmland soils are those soils with an agricultural rating of Class I or II. In addition, the USDA considers Class III soils to be of **Statewide importance** to agriculture. The MPC recognizes Class I-III soils as prime farmlands. The USDA describes prime agricultural land as “the land that is best suited for producing food, feed, forage, fiber and oilseed crops.” It possesses the soil quality, growing season and water supply needed to economically produce a sustained high yield of crops

when it is treated and managed using acceptable farming methods. Prime farmlands are rich in chemical nutrients, have good permeability to air and water with few rocks, are well-drained but resistant to erosion, and have relatively flat topography. Prime farmlands produce the highest yields with minimal inputs of energy and economic resources, and farming them results in the least damage to the environment. The USDA encourages all levels of government and private individuals to effectively use these valuable resources to meet the nation's food and fiber needs.

Unsurprisingly, the low-lying flat lands underlain by carbonate geology contain about 4066 acres of Class I and II prime agricultural soils. The Conestoga, Clarksburg and Lindside soils dominate the Township's prime farmlands. These soils usually have slopes of less than 8 percent and can be found throughout the Township. Smaller narrow bands of Class III soils of Statewide importance totaling some 179 acres are found in the northern and southern extremities of the Township. The Glenelg, Clarksburg and Readington soils comprise most of these limited areas. generally outside the with slopes generally between 8 and 15 percent. Non-agricultural soils are largely found along the periphery of the Township and straddling its watercourses. The Dunning, Penlaw, Manor and Mt. Airy soils comprise most of these areas beyond of the urban lands.

Unfortunately, the soils most suitable for agricultural purposes are also those most suitable for development, creating competition between these uses for these soils, and resulting in the loss and fragmentation of the most productive farmlands. Certainly some valuable farmlands have been lost within the Township but many remain. **Prime farm soils and soils of Statewide importance should be protected from conversion to other uses through appropriate planning and zoning.** Information about various agricultural preservation programs is contained with Chapter VI of this Plan.

**Soil Composition
Conewago Township**

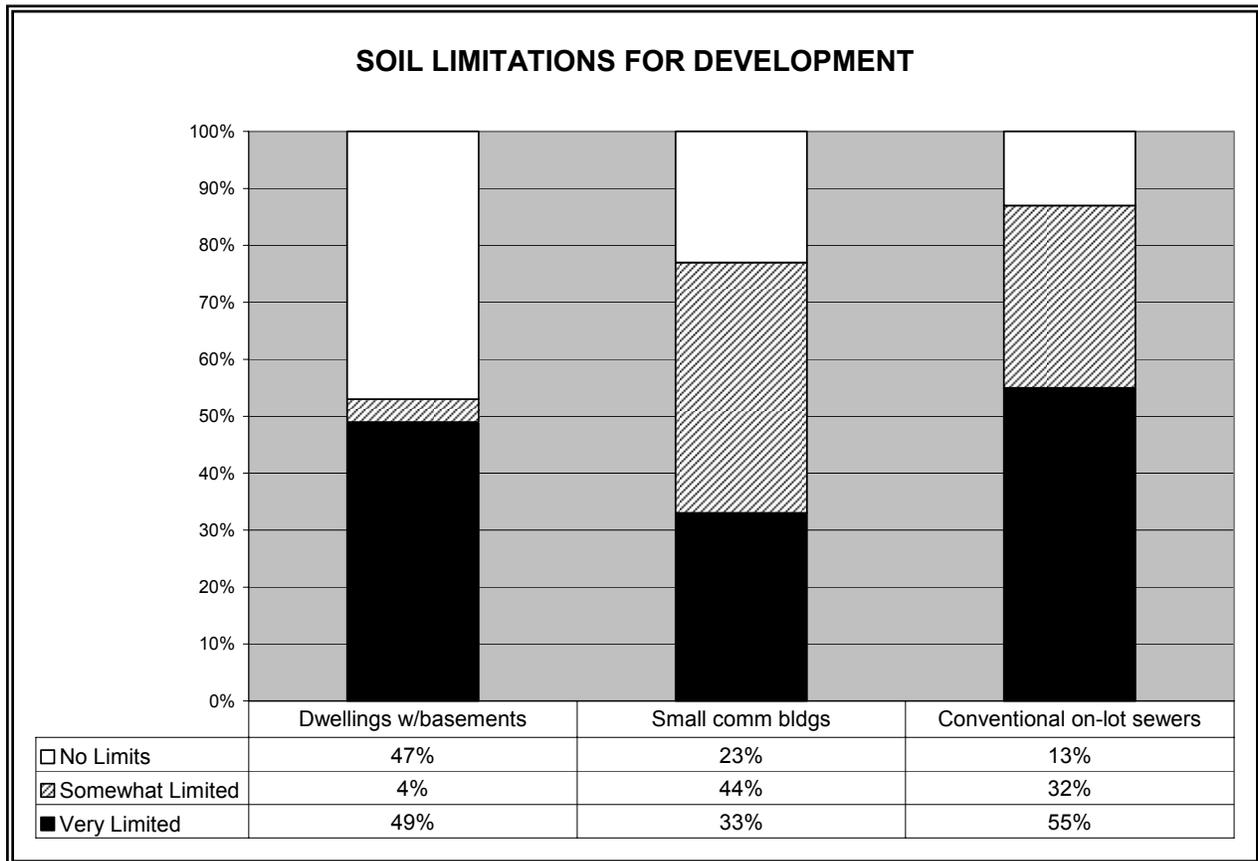


² PA Municipalities Planning Code, Act 247, as amended, Section 604.3.

DEVELOPMENT CONSTRAINTS

Another important soils consideration relates to those soils that produce constraints for building development and the operation of on-lot utilities. Building development constraints can include a wide range of soil characteristics, including steep slopes, wetness, depth to bedrock, frost action, shrink-swell, low strength and cemented pans, and flooding. Other soil-related constraints become important if on-site sewage disposal systems are contemplated. Constraints associated with the installation and operation of these systems include steep slopes, wetness, flooding, slow percolation rates, poor filtration characteristics, and high secondary porosity due to the presence of fractures and solution channels. It is important to identify and map those soils that possess building development and conventional on-site sewage disposal constraints so that future land uses can be kept away from these environmentally sensitive areas.

Nearly all of the “undeveloped” soils types mapped within Conewago Township possess some limitations for urban development. The following depicts the percentages of land area characterized by soils with development limitations for three different land uses (e.g. dwellings with basements, small commercial buildings and conventional on-lot sewer systems.)



The Soils and Geology Map only depicts soils that are considered to be “very limited” for development purposes. As the map reveals, most of the soils that are considered to be “very limited” are limited for both residential and small commercial buildings.

Unfortunately and unsurprisingly, those soils with development limitations also generally correspond with soils that are not agriculturally productive. The Clarksburg soils are the exception to this

condition being both fertile and difficult to develop. These “very limited” soils are largely found along the periphery of the Township and straddling its watercourses. The Dunning, Penlaw, Manor and Mt. Airy soils comprise most of these areas. ***The Township should incorporate suitable environmental impact requirements within its Subdivision and Land Development Ordinance to ensure that localized soils limitations (and others) are either adequately protected and/or managed prior to approval of development plans.***

D. SURFACE WATERS

The way in which water moves through our environment has implications for land use planning. First, rivers, streams, creeks, runs, and their floodplains present hazards to development. Second, land areas adjacent to surface waters offer high quality habitat, conservation and recreational opportunities. Finally, the drainage basin within which surface waters flow is a basic geographic unit used to plan and design sanitary and storm sewers; systems that can make use of gravity-fed lines could reduce the costs of these types of utilities.

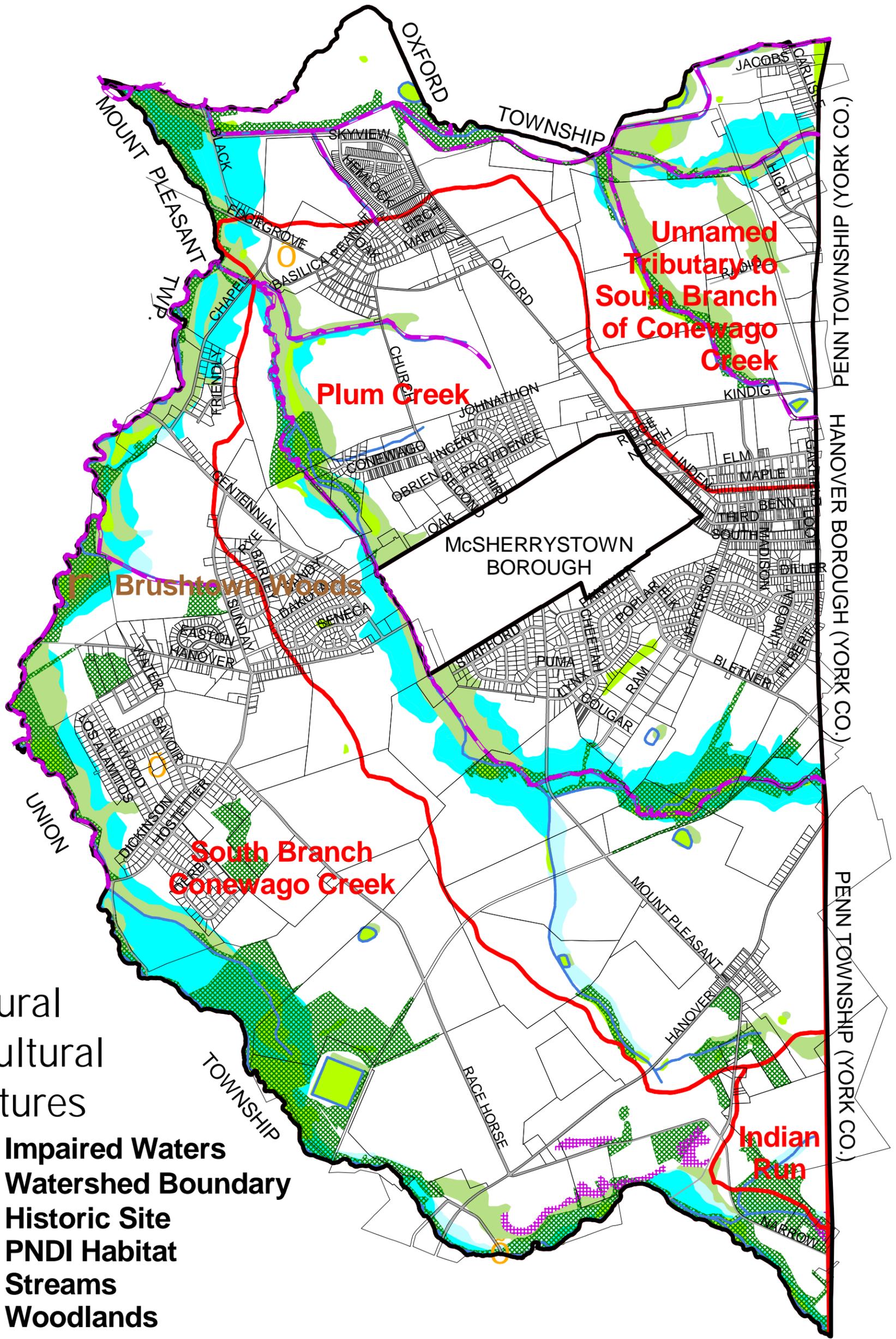
DRAINAGE BASINS

A drainage basin consists of the streams and associated floodplains that dispose of surface water from that area. Drainage basins are separated by ridgelines. All of the water draining from Conewago Township flows into the Conewago Creek, Susquehanna River, Chesapeake Bay and ultimately the Atlantic Ocean. Because of the carbonate geology that underlies most of the Township, the Township’s drainage pattern is sparse. Aside from several large streams, the landscape has relatively few watercourses as the soil and bedrock tend to readily absorb rainwater. This condition is particularly evident directly along the South Branch of Conewago Creek. The Township’s major and minor drainage basins as identified by the PA Department of Environmental Protection (DEP) are depicted on the *Natural Features Map*.

Conewago Creek is a 77.6 mile (125 km) long tributary of the Susquehanna River. Conewago Creek drains 510 square miles of Adams and York Counties in Pennsylvania, also draining a small portion of Carroll County, Maryland. The source is at an elevation of 1440 feet (449 m) near Caledonia Park in Mount Gretna Heights in Adams County. The mouth is the confluence with the Susquehanna River at York Haven in York County at an elevation of 259 feet (78.9 m).³ The South Branch of Conewago Creek flows in a northwesterly direction along the southern and western boundaries of the Township. Along this course it connects with several tributaries, each with their separate drainage basins as described below. Directly, and through these tributaries, the South Branch of the Conewago Creek drains the entire Township. Two small unnamed tributaries that flow directly into the South Branch of the Conewago Creek are designated cold water fishing streams. These occur along the western central border of the Township. None of the Township’s watercourses are special protection waters, nor scenic rivers under the applicable programs.

Plum Creek is a local tributary of the South Branch of the Conewago Creek that is mostly confined within Conewago Township and Penn Township (York County). Plum Creek flows in a northwesterly direction to its confluence with the South Branch of the Conewago Creek in the northwestern corner of the Township. The Plum Creek generally drains the central portion of the Township plus the Borough of McSherrystown. Most of Plum Creek within Conewago

³[http://en.wikipedia.org/wiki/Conewago_Creek_\(west\)](http://en.wikipedia.org/wiki/Conewago_Creek_(west)), May 17, 2007.



Unnamed Tributary to South Branch of Conewago Creek

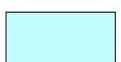
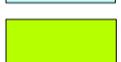
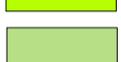
Plum Creek

Brushtown Woods

South Branch Conewago Creek

Indian Run

Natural & Cultural Features

-  Impaired Waters
-  Watershed Boundary
-  Historic Site
-  PNDI Habitat
-  Streams
-  Woodlands
-  FEMA Floodplain
-  Alluvial Soil
-  USDI Wetland
-  Hydric Soil
-  Steep Slope (15+%)



Conewago Township
Adams County, PA



Township exhibits a sparse drainage texture and dendritic pattern owing to its underlying limestone geology; however, some angularity occurs at the junction of the Conestoga and Kinzers geologic formations, near Plum Creeks outfall into the South Branch of the Conewago Creek.

Indian Run forms a small watershed in the southeast corner of the Township that mostly extends east into Penn Township, York County. This watershed only affects a few properties within Conewago Township. Indian Run flows east to west and connects with the South Branch of the Conewago Creek about 300 feet west of Narrow Road.

An unnamed tributary of the South Branch of the Conewago Creek exists along the northern boundary of Conewago Township. This watershed follows a narrow east-to-west alignment then broadens to the south generally paralleling Oxford Road to the southern edge of the Borough of McSherrystown where it turns due east. The alignment of this watercourse appears to have been altered to follow the southern edge of a quarry. Water flows in a northwesterly direction and its confluence with the South Branch of the Conewago Creek occurs in the northwestern corner of the Township near Black Road.

IMPAIRED WATERS

“The Department of Environmental Protection (DEP) has an ongoing program to assess the quality of waters in Pennsylvania and identify streams and other bodies of water that do not meet water quality standards as "impaired." Water quality standards are established for the different uses that waters can support and the respective goals established to protect those uses. Uses include, among other things, aquatic life, recreation, and drinking water. Water quality goals are numerical or narrative water quality criteria that express the in-stream levels of substances that must be achieved to support the uses. Periodic reports on the quality of waters in the Commonwealth are required under section 305(b) of the Federal Clean Water Act.

“Section 303(d) of the Act requires states to list all impaired waters not supporting uses even after appropriate and required water pollution control technologies have been applied. For example, a waterbody impacted by a point source discharge that is not complying with its effluent limit would not be listed on the 303(d) list. The Department would correct the water impairment by taking a compliance action against the discharger. Waterbodies that still do not meet water quality standards after this additional evaluation, however, must be included on the 303(d) list of impaired waters. The 303(d) list includes the reason for impairment, which may be one or more point sources (like industrial or sewage discharges), or non-point sources (like abandoned mine lands or agricultural runoff).

“States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to the quality that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water. If states do not develop TMDLs, EPA is required by regulation to do so.

“A TMDL is designed to reduce pollutant loads to impaired waters and enable these waters to meet water quality standards. Pennsylvania has committed to developing TMDLs for all impaired

waterbodies and will use both traditional and new approaches to correct water quality problems.⁴

Within the Township, most of the length of the South Branch of the Conewago Creek and its tributaries have been designated as “impaired waters” by the PA DEP. Specifically, the segments of creek north of Hostetter Road, including its tributaries are impaired. Plum Creek is impaired, except for that segment located that extends southward away from Mount Pleasant Road. **According to Vy Trinh, Watershed Specialist for the Adams County Conservation District, Adams County TMDLs have not been programmed for completion by the PA DEP until 2019. In the meantime, Township Officials should be aware that surface water pollution exists and that suitable stormwater management and erosion control practices should be applied accordingly. In addition, riparian buffers can dramatically improve surface water quality locally; more information on this subject is contained in Chapter VII of this Plan.**

WETLANDS

Wetlands are areas that are regularly inundated or saturated long enough to produce the particular types of vegetation associated with **swamps, bogs and marshes**. While there are several definitions of wetlands used by regulatory agencies, all definitions require the presence of hydrophytic plants (plants that grow in wet soils), hydric (wet and anaerobic) soils, and the presence of water at or near the surface at some part of the growing season.

Recently, much attention has been focused upon the importance of wetlands. All wetlands have value, although their value is highly variable. Wetlands support an abundance and diversity of life unrivaled by most types of environments. The many benefits wetlands provide are summarized in the adjoining inset.

Benefits of Wetlands

1. Provide food and habitats for an abundance of animal life.
2. Are breeding, spawning, feeding, cover, and nursery areas for fish.
3. Are important nesting, migrating and wintering areas for waterfowl.
4. Act as natural storage areas during floods and storms.
5. Act as groundwater recharge areas, particularly during droughts.
6. Purify ground and surface waters by filtering and assimilating pollutants.

Wetlands within the Township have been identified from two sources. First the Adams County GIS data incorporates the U.S. Department of the Interior's National Wetlands Inventory, which is derived from high altitude aerial photograph interpretation of surfacial features commonly associated with wetlands. This inventory tends to identify the larger wetland areas only. These include a combination of scattered palestrine, riverine and lacustrine wetlands. Palestrine wetlands are ponds and small lakes, riverine wetlands are associated with rivers, streams, runs, creeks, and brooks and lacustrine wetlands are associated with lakes.

Second, the latest Soil Survey completed for the County by the Natural Resources Conservation Service identifies about 582 acres of hydric soils that can also indicate the presence of wetland areas. The following hydric soils within the Township have also been depicted with severe building and sewer constraints on the Soils & Geology

Wetland Protection Measures

1. Modifications to road maintenance practices(e.g., salt and de-icing chemicals).
2. Homeowner education (e.g., application of yard chemicals).
3. Development setbacks.
4. Limitations on land uses.
5. Filter strips.
6. Environmental Impact Assessment.

⁴ <http://www.dep.state.pa.us/dep/deputate/watermgt/wgp/wgstandards/303d-report.htm>, March 26, 2003

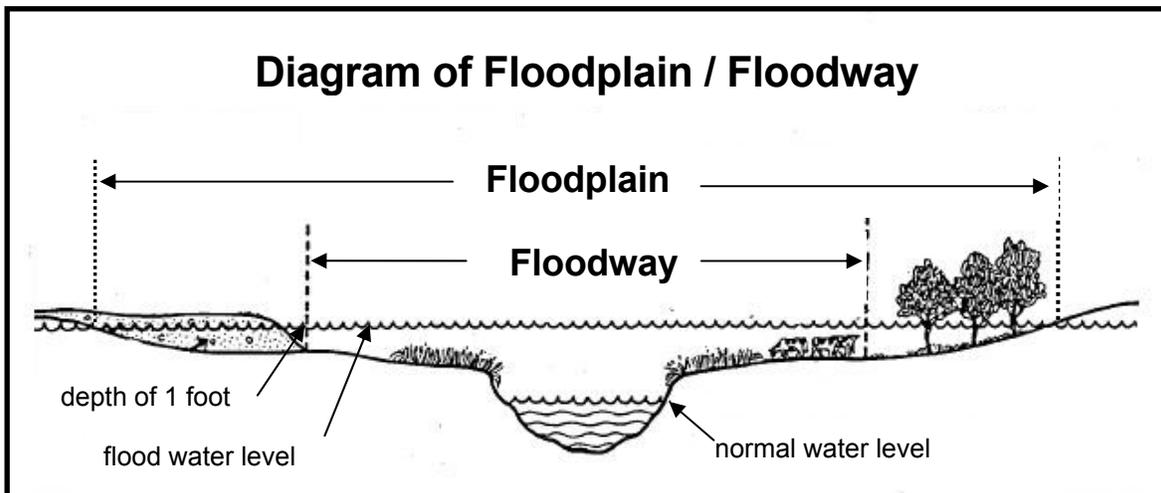
Map contained earlier in this Chapter.

HYDRIC SOILS TABLE				
HYDRIC SOILS CHARACTERISTICS OF CONEWAGO TOWNSHIP				
Soil Symbol	Soil Name	Slope	Agriculture Rating	Hydric
BA	Baile silt loam	0	-	Y
Dy	Dunning silt loam	0	3	Y
Lc	Lamington silt loam	0	-	Y
W	Water	NA	NA	Y

A variety of laws have been passed to protect wetlands. Infill and development in larger wetlands are now regulated by the U.S. Environmental Protection Agency and subject to both State and Federal permitting processes. Careful local planning, education, and the incorporation of protective standards into local subdivision and land development ordinances could extend further protection to the Township's smaller wetlands as well as to land areas immediately surrounding wetlands. ***Future planning should avoid development in areas with wetlands or hydric soils.***

FLOODPLAINS

A floodplain is an area of land adjoining a water source, such as a river or stream, that is subject periodically to partial or complete inundation by the water source. The floodplain consists of the **floodway** and the **floodway fringe**. The floodway is the stream channel plus an additional area that must be kept free of encroachments to avoid an increase in flood heights. The floodway fringe is the remaining portion of the floodplain within which encroachments must be limited.



Flooding can result in the loss of life and property, health and safety hazards and significant public expenditures for flood protection and relief. Floodplains also often contain valuable prime farmlands and wildlife habitats. Floodplain protection safeguards the public health, safety and welfare, while protecting natural resource values.

Flood hazard areas within the Township have been identified by the Federal Emergency Management Agency (FEMA). Local governments which regulate development and fill within flood hazard areas qualify to participate in the Federal Flood Insurance Program. Flood hazard areas have been identified for the Township, which participates in the Federal Program.

Federal floodplain mapping denotes estimated 100 and 500-year floodplain boundaries, areas within which there is the probability that flooding will occur once in 100 and 500 years, respectively. These areas are identified on the *Natural Features Map*. The presence of alluvial soils (soils deposited by water) may also be used to identify additional areas subject to periodic inundation. The latest Soil Survey for the County identifies the following alluvial soil types for the Township and their respective characteristics:

ALLUVIAL SOILS TABLE				
ALLUVIAL SOILS CHARACTERISTICS OF CONEWAGO TOWNSHIP				
Soil Symbol	Soil Name	Slope	Agriculture Rating	Hydric
Cm	Codorus silt loam	0	1	N
Dy	Dunning silt loam	0	3	Y
Lw	Lindside silt loam	0	1	N
W	Water	NA	NA	Y

The delineation of alluvial soils often provides wider floodplains than those identified by FEMA; this is an option for increased protection against flooding. The Township's alluvial soils total some 822 acres and have been depicted with severe building and/or sewer limitations on the Soils and Geology Map contained earlier in this Chapter.

Article X of the Conewago Township Zoning Ordinance regulates activities and improvements within the floodplain. This ordinance relies upon the study conducted by the Federal Insurance Administration to identify flood-prone areas. Specifically, the ordinance establishes the 100 and 500 year floodplains as the regulatory floodplain. It also includes alluvial soils within the regulatory floodplain. ***The Township should continue in this effective practice to protect its floodplains and keep abreast of any future regulatory changes that may be forthcoming from FEMA to stay eligible for federal flood insurance protection.***

STORM WATER MANAGEMENT

One of the most frequently described planning problems is the impact from storm water runoff. As an area develops, the patterns, volume and velocities of storm water runoff are likely to change. Individual developments produce marginal impacts; however, these impacts produce major cumulative problems unless measures are used to protect the capacity of watersheds to discharge surface water in a timely manner and at a safe rate. ***Storm water runoff can and should be managed.*** The benefits of storm water management are summarized in the adjacent inset.

Benefits of Storm Water Management
1. Reduces off-site and downstream flooding.
2. Reduces soil erosion, sediment loading and habitat loss.
3. Protects surface water quality.
4. Improves groundwater recharge.

Recognizing the need to resolve serious problems associated with flooding the Pennsylvania General Assembly enacted Act 167, the Pennsylvania Stormwater Management Act. This Act changed the way local stormwater management occurred by applying a watershed-based, comprehensive program of Township stormwater management. Act 167 requires all counties within Pennsylvania to prepare and adopt stormwater management plans for each of its watersheds, as designated by the Pennsylvania Department of Environmental Protection (DEP). These plans are to be prepared in consultation with municipalities within the watershed, working through a Watershed Plan Advisory Committee. The plans are to contain stormwater controls to manage stormwater runoff from proposed subdivision and land development applications. Once adopted, local municipalities are required to implement stormwater management ordinances that rely upon selected management techniques within 6 months or risk the loss of future State funding for a variety of projects and activities. Adams County is scheduled to initiate a County-wide stormwater management plan to include Conewago Township. Local Officials should cooperate in this Plan and monitor its progress and recommendations, then follow-up with suitable implementation.

Best Management Practices (BMPs) are techniques that manage stormwater from particular land uses in a manner that is more consistent with the natural characteristics of the resources of the watershed. BMPs are a broad series of land and water management strategies designed to minimize the adverse impacts from developments and other disruptive activities. BMPs provide varying levels of protection and are becoming more widely utilized within Pennsylvania.

BMPs can be “structural” or “non-structural”. Structural BMPs are measures that require the design and physical constructions of a facility to assist with reducing or eliminating a non-point source of pollution and control stormwater. Structural BMPs are most often applied to agricultural operations and stormwater management. Non-structural BMPs are approaches to planning, site design or regulations that positively affect water quality and reduce stormwater runoff. Nonstructural BMPs are generally implemented through the enactment of municipal ordinances that specify site design and construction standards and operational procedures and activities. The table on the following page lists BMPs for various land use settings.

BEST MANAGEMENT PRACTICES

<p>Agricultural BMPs include requirements that adequately address soil erosion control measures, nutrient management and pest control.</p> <ul style="list-style-type: none"> • Conservation management, tillage and contour farming techniques intended to limit disturbance and erosion. • Provisions for grass or filter strips intended to remove sediment or other non-point pollutants from runoff. • Providing stream fencing intended to keep livestock out of stream channels. • Establishing programs for pesticide management intended to reduce the off-site impacts or spraying or applying pesticides. • Developing a manure management program to reduce runoff of nutrients and pathogens to streams. 	<p>Conservation BMPs include requirements that adequately address soil erosion control measures and stabilization techniques.</p> <ul style="list-style-type: none"> • Stabilize stream embankments by utilizing structural or natural techniques designed to minimize erosion. • Provisions for grass or filter strips intended to remove sediment from point or non-point pollutant sources. • Preserve natural resources and habitats. • Establish networks of forested riparian buffers. • Establish mandatory setback requirements from wetlands and floodplains. • Develop a public education program to provide information (seminars and literature) to the residents of the community on the importance of protecting our natural and hydrological resources.
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<p>Stormwater Management BMPs include requirements that adequately address surface drainage, groundwater recharge and soil erosion control measures.</p> <ul style="list-style-type: none"> • Minimize the volume of stormwater runoff generated by minimizing impervious surfaces required to support development. • Promote effective groundwater recharge within all stormwater management facilities including detention ponds, swales and downspouts. • Protect receiving stream channels by routing outfall locations from detention basins through grass or filter strips intended to remove contaminants. • Protect adjacent land areas from direct stormwater discharge by establishing a minimum isolation distance to enhance stabilization and groundwater recharge. • Establish stormwater management and natural features easements. • Utilize pervious surfaces to promote groundwater recharge. • Establish networks of forested riparian buffers. 	<p>Land Development BMPs include requirements that adequately address design requirements and conservation management techniques.</p> <ul style="list-style-type: none"> • Reduction of infrastructure required to adequately support subdivision and land development activity. • Develop effective requirements to minimize the environmental impacts resulting from the change in land use. • Promote groundwater recharge by establishing minimum standards to maintain a balanced water budget of what is required to support the needs of the development versus the amount of water that is lost as a result of the development. • Incorporate the use of non-structural stormwater management techniques into site landscaping to minimize stormwater runoff and maximize infiltration. • Establish networks of forested riparian buffers as part of the landscaping requirements. • Include incentives in municipal regulations to achieve site design that is sensitive to existing environmental, natural, scenic, historical and cultural resources.
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E. IMPORTANT PLANT AND WILDLIFE HABITATS

As an area is converted from its natural to a man-made state, the delicate balance of the local ecosystem is often disrupted. This imbalance degrades or strains the environment's ability to support varied forms of plant and animal species. Consequently, species become rare, threatened or endangered.

<p style="text-align: center;">Benefits of Habitat Protection</p> <ol style="list-style-type: none"> 1. Protection of plant and wildlife diversity. 2. Protection of threatened and endangered species. 3. Protection of woodlands and linear corridors. 4. Provision of passive recreation opportunities.

State and Federal agencies have become increasingly concerned over the protection of local natural habitats as a means of protecting wildlife diversity. The protection of these habitats can also provide other benefits, as summarized in the adjacent inset. For these reasons, all levels of government and other conservation-oriented groups have become involved in the protection of these habitats.

NATURAL AREAS & HABITATS

Information for this section was obtained from the Natural Areas Inventory of Adams County, Pennsylvania (1996). This inventory is a document compiled and written by the Pennsylvania Science Office of The Nature Conservancy. It contains information on the locations of rare, threatened, and endangered species and of the highest quality natural areas in the county.

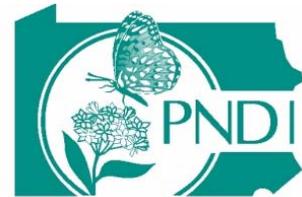
<p style="text-align: center;">Natural Areas/Habitats Protection Measures</p> <ol style="list-style-type: none"> 1. Development and vegetation removal setbacks. 2. Modifications to road maintenance (e.g., snow and ice removal; salt and de-icing chemicals). 3. Limitations on land use. 4. Homeowner education (e.g., application of yard chemicals/removing plants). 5. Environmental Impact Assessments.

Accompanying each site description are general management recommendations that would

help to ensure the protection and continued existence of these rare plants, animals and natural communities. The recommendations are based on the biological needs of these elements (species and communities). The recommendations are strictly those of The Nature Conservancy.

Implementation of the recommendations is up to the discretion of the landowners. However, cooperative efforts to protect the highest quality natural features through the development of site-specific management plans are greatly encouraged. Landowners working on management or site plans of specific areas described in this document are encouraged to contact the Pennsylvania Science Office of The Nature Conservancy for further information.⁵

Through its partnership in the Pennsylvania Natural Diversity Inventory, the Nature Conservancy uses some 800 sources of information to map, describe and disseminate facts about important natural features.



The inventory includes animals, plants, habitats, and natural communities that are unique biological resources within the county. The end results provide a list of the most important biological sites, identify their living resources, and provide a map of their locations. Recommendations are included with the inventory on the management of the living resources present.

It is the policy of the PNDI not to release detailed site-specific information about significant natural features for general exposure to the public. This protects the feature from persons who become curious and attempt to locate and collect such features. Instead, PNDI provides generalized locations of known or historic natural features occurrences.

Using PNDI's criteria, the Township contains one important plant habitat of statewide importance in maintaining biological diversity as described below and depicted on the Natural Features Map.

Important Natural Areas / Habitats within the Township		
Source: A Natural Areas Inventory of Adams County, Pennsylvania (1996)		
Site Name	Description/Notes	Management Strategies
Brushtown Woods	A small but reproducing population of a PE tree species (SP502) occurs in this relatively large area (50 acres) of floodplain forest along Conewago Creek. Associates include sycamore, hickory & ash	Maintaining the woodland is critical for the PE species and serves as a buffer to minimize erosion and maintain water quality.
Source: http://www.naturalheritage.state.pa.us/CNAI_PDFs/Adams%20County%20NAI%201996.pdf		

A requirement for an Environmental Impact Assessment prior to any subdivision approval should be applied to areas within these natural habitats. These EIAs can be applied universally within rural areas or imposed as a special overlay zone within the designated areas. EIAs should require a thorough investigation of the extent of the habitat followed by the identification of potential adverse impacts as well as opportunities and mitigating measures that could protect these areas amid development.

⁵ A Natural Areas Inventory of Adams County, PA, (1996) pg. 1.

Applicants should be required to provide written evidence of review and approval of the proposed use from the PNDI prior to Township approval of the plans.

WOODLANDS

Most of the Township has been cultivated and/or developed; however, several masses of woodland remain. The Townships woodlands have been depicted identified using aerial photography. Much of the Township's woodlands are located along its extensive stream lengths. The largest single concentration of woodlands occurs surrounding the Hanover Reservoir and Water Works properties. In addition, it would appear the tree lined driveways are popular within the rural areas of the Township.

Recent amendments to the Pennsylvania Municipalities Planning Code (MPC) specifically enable local governments to protect significant woodland areas by preventing extensive development in those areas and/or engaging development review procedures that conserve these important natural features. However, the MPC also requires every municipality to permit forestry uses by right in every zone within the Commonwealth. **Therefore, the Township must make this required change within its Zoning Ordinance. Furthermore it is vital that the Township develop and adopt sound forestry management regulations that can protect the sensitivity of wooded areas and adjoining neighbors from the deleterious impacts of uncontrolled logging uses and operations. More on this subject and a model forestry ordinance can be found on in Chapter X of this Plan.**

Next, the concentrations of woodland deserve protection particularly in light of the Township's desire to protect its ground and surface waters. Reforestation and tree preservation requirements can require that a majority of existing trees in proposed subdivisions or land developments be maintained or replaced, except those whose removal is necessary for the proposed structures and required improvements.

The Township should consider the adoption of other protective measures for woodlands, such as limiting the removal of trees adjacent to streams, in steep sloped areas, and in or adjacent to identified natural habitat areas. In addition, developers as well as woodlot managers should be encouraged to maintain established wildlife corridors in the form of linkages to other wooded areas.

Municipal officials should adopt zoning and subdivision and land development standards limiting the removal of trees in sensitive areas, and encouraging the preservation of wildlife corridors.

Benefits of Woodlands Protection

1. Slows erosion by stabilizing steep slopes and stream banks through extensive root systems.
2. Aids in storm water management and replenishment of aquifers by promoting groundwater recharge.
3. Aids in purifying groundwater by filtering runoff and reducing sediment wash caused by erosion.
4. Provides important wildlife habitat areas, particularly when large, unbroken areas of forest cover or linkages to other blocks of woodland can be maintained.
5. Offers excellent passive recreation opportunities, such as hiking, horseback riding, photography, hunting, and camping.
6. Helps reduce the level of air pollution by absorbing airborne pollutants and producing beneficial carbon dioxide.
7. Moderates climatic conditions by providing wind-breaks and shade from direct sunlight.

Woodland Protection Measures

1. Tree removal setbacks adjacent to streams.
2. Tree removal limitations in steep-sloped areas and in and near natural habitat areas.
3. Maintenance of wildlife corridors.

BIG TREES OF PENNSYLVANIA

When assessing the natural features of an area, trees warrant special consideration. Apart from their obvious aesthetic appeal, trees offer such practical benefits as shade from solar radiation, wind reduction, noise abatement, air pollution mitigation, and an environment for wildlife. However, the trees discussed in this section transcend a simple summation of attributes. They are natural phenomena and should be protected as such.

Big Trees of Pennsylvania, compiled by a Pennsylvania Bureau of Forestry-sponsored committee, is a registry reserved for the largest member of every species of tree found in Pennsylvania. When assessing the size of a tree, *Big Trees of Pennsylvania* measures the circumference of the trunk, the height of the tree, and the average crown spread.⁶ Using this criteria, one tree in Conewago Township was judged to be one of the largest of its species.

A White Oak (*Quercus alba*) is located at the Hanover Shoe Farms in a meadow off of Sells Station Road along the South Branch of the Conewago Creek, near PA Route 194, Mount Pleasant.⁷

According to the landowner, this tree is currently located within Union Township. However, the Township boundary is the adjoining creek which can relocate over time. ***Should the creek shift around the tree such that it is located within Conewago Township, local officials should seek its protection through proper land use and site planning.***

F. HISTORIC SITES AND DISTRICTS

Conewago Township, like much of southeastern Pennsylvania, is fortunate to possess a rich cultural heritage. Today this heritage is apparent from the many older individual buildings, structures and related settlements that are scattered throughout the Township. Local officials and residents recognize the value of conservation, rehabilitation, and adaptive reuse of these historic resources features as a means of providing a glimpse into the area's important past. Additionally, historic preservation can provide educational opportunities regarding historic lifestyles and architecture. Well-maintained historic areas create a sense of unique identity that stimulates civic pride and economic vitality, and can become a basis for tourism.

The Adams County Historical Society has a listing of 95 historic properties within Conewago Township. However, the methodology for this inventory is unknown and its results are out-of-date. Copies of the individual site records have been provided to the Township.

As an integral part of Adams County, Conewago Township has a history that is rich with famous incidents and landmarks. The first European settlers that came to the area were of German and Scotch-Irish origin. Records state that these settlers found the land west of the Susquehanna to be a "very acceptable place for settlement." When the first settlers arrived around 1734, they began clearing hardwood trees near Hanover.

During this time, William Penn's followers were settling throughout Conewago Township. Soon after, Maryland's followers of the Baltimore-Calverts began moving north from Maryland to settle. This mixture of people resulted in varied religious interests with almost equal numbers of

⁶Maurice Hobaugh, Ed., *Big Trees of Pennsylvania*, (Mechanicsburg, PA: 1993), p. 7.

⁷ http://www.pabigtrees.com/trees/species/quercus_oak.htm

Protestant and Catholic settlers.

In 1764, Mason and Dixon were hired to survey the area and establish a line between land owned by the Penns and Lord Baltimore. Today this line remains as the southern boundary of Adams County as well as the state line between Pennsylvania and Maryland.

Conewago Township was formed in 1801 from portions of Heidelberg and Manheim Townships. The original name of the area was Digges' Choice, bestowed upon it in 1727, when John Digges received 10,501 acres by Charles Calvert, Fifth Lord of Baltimore. In 1730 the Lillys family settled and gave the Township its Indian name, Conewago, derived from "Caughnawaga," (or "Kaughnawaga") meaning "the place at the rapids."

Conewago Chapel near present-day Edgegrove was established as a combination log dwelling and chapel in 1741 and is the oldest Catholic Chrch west of the Susquehanna River. The present-day stone structure is the oldest Catholic Church building in the United States, dating back to 1787. On January 29, 1975, Conewago Chapel became part of the National Register of Historic Places as a National Historic Landmark.

In addition, the Pennsylvania Museum Commission's Bureau for Historic Preservation has identified two additional historic sites that they have deemed to be "eligible" for inclusion of the National Register of Historic Places. First is the Helen Buck House along Miller Bottom Road and the second is the Shoe Farm Bridge

Despite Gettysburg's role during the Civil War, Conewago Township was not subjected to battles and the movement of military forces.

It is clear that historic preservation is a function that has not received due consideration within the Township. Local officials are encouraged to consider the benefits of the following voluntary historic preservation approaches and gauge public reaction. The following list some of the actions that can better incorporate historic preservation within the Township. The Township should solicit interest in the creation of a local or regional conservancy devoted to the updating of historic site inventories and the advocating of preservation strategies.

Successful historic preservation involves more than a mere compilation of data. Rather, it should recognize the importance of its historic defining features and indicate how those features relate to the future by:

- 1. Establishing realistic goals to implement suitable preservation guidelines and standards. Realistic goals should be established that are adopted with considerable public scrutiny and support (make sure that goals are achievable);***
- 2. Identifying individual resources and districts based on the survey that could be eligible for the National Register of Historic Places and apply for listing in the Register;***
- 3. Adding regulations into the zoning ordinance which will help achieve historic preservation goals, like the review of demolitions; design guidelines for infill construction; Historic Overlay Zones; incentives for adaptive reuse, rather than***

demolition, etc.;

- 4. Updating existing zoning regulations to resolve conflicts with historic preservation goals, like incompatible uses, excessive setbacks, required off-street parking, reduced lot coverage, etc.; and,**
- 5. Developing partnerships with community groups and organizations to facilitate a public education initiative about local history and the historic resources in the municipality.⁸**

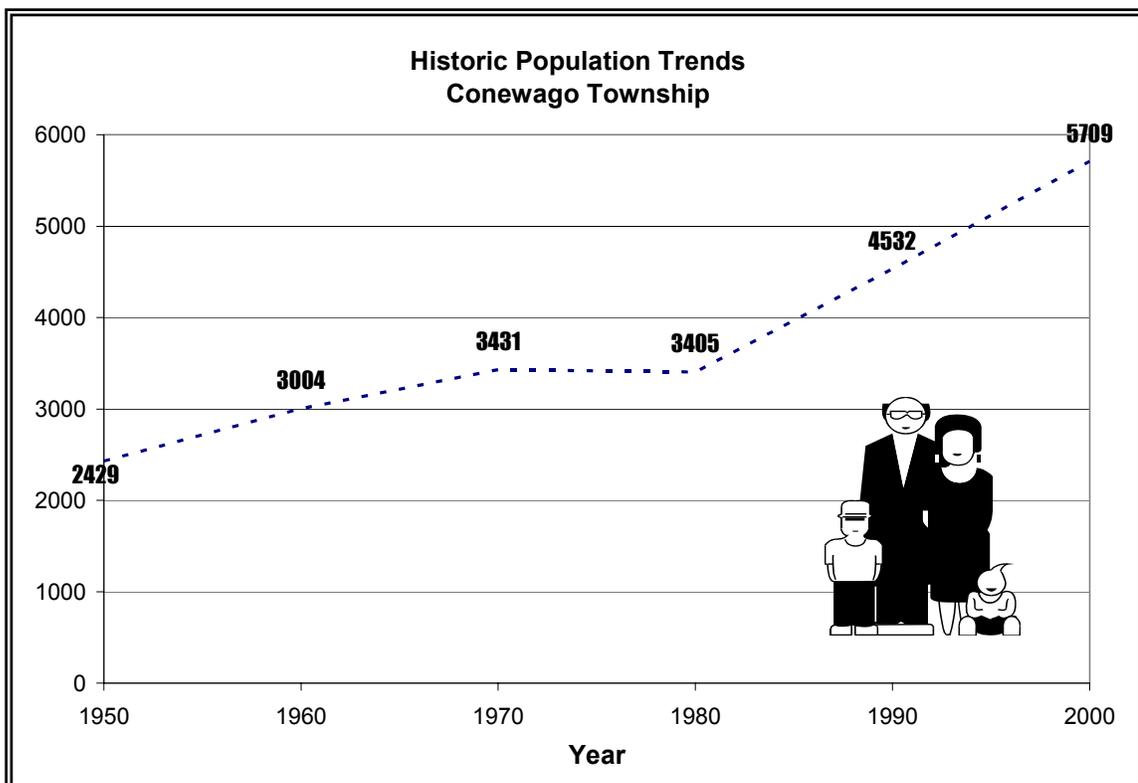
⁸Letter from Carol E. Wilson, Historic Preservation Specialist to Harry Roth

IV. Demographics

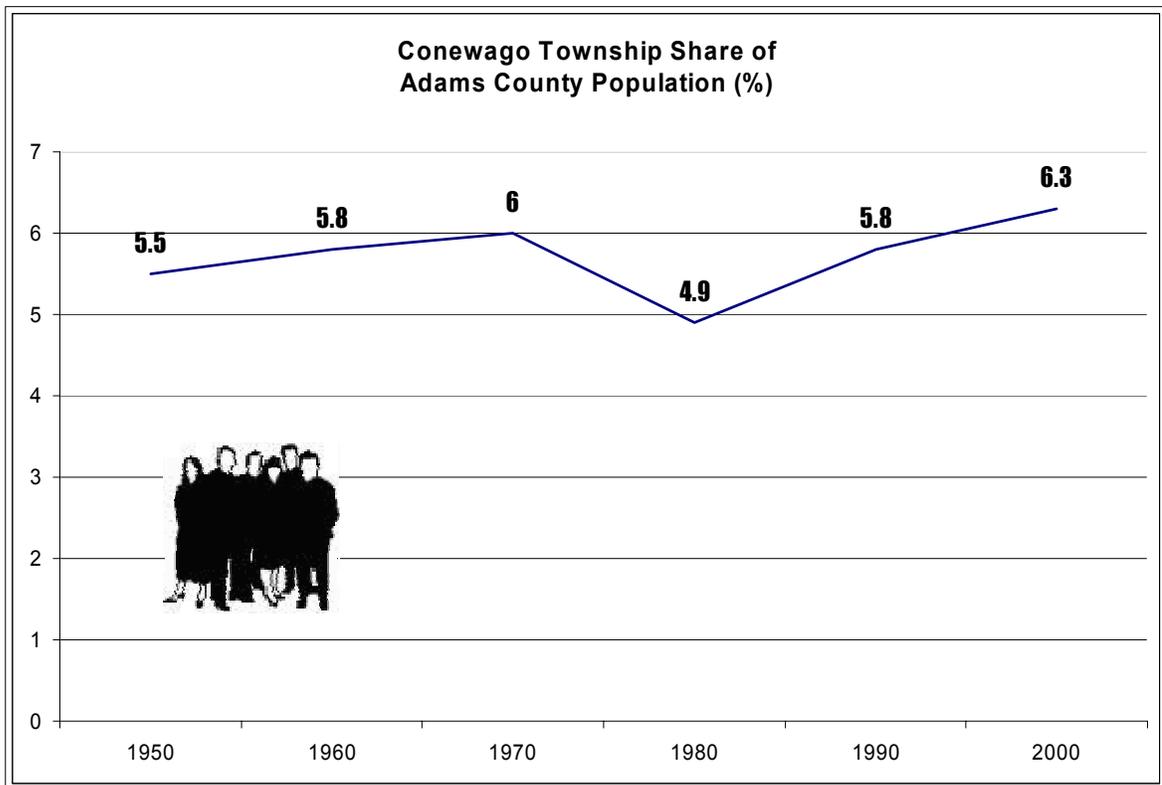
The allocation of municipal resources must consider the population to be served. Population, housing and economic analyses are a principal component of any comprehensive plan. Obviously, the overall size of a population is related to the amount of land, manpower and services to be provided. In addition, particular groups within the population have different needs. This section will present past, current and expected population statistics in order to determine the Township's needs.

A. Historic Population Growth

The historical growth pattern of an area provides insight as to the growth that might be expected in the future. The following table lists the amount of population growth that has occurred over the last 50 years within the Township.



From the above graph, several trends are visualized. First, the Township began the last half century with a period of moderate growth between 1950 and 1970. During this time the Township averaged an annual growth rate of just over 2 percent. Then between 1970 and 1980 it actually experienced a loss 26 residents. However, after 1980 the Township has experienced steady and rapid growth through the last Census in year 2000. In this latest period the Township's population expanded by 2304 residents or over 67 percent averaging almost 3.4 percent growth annually.

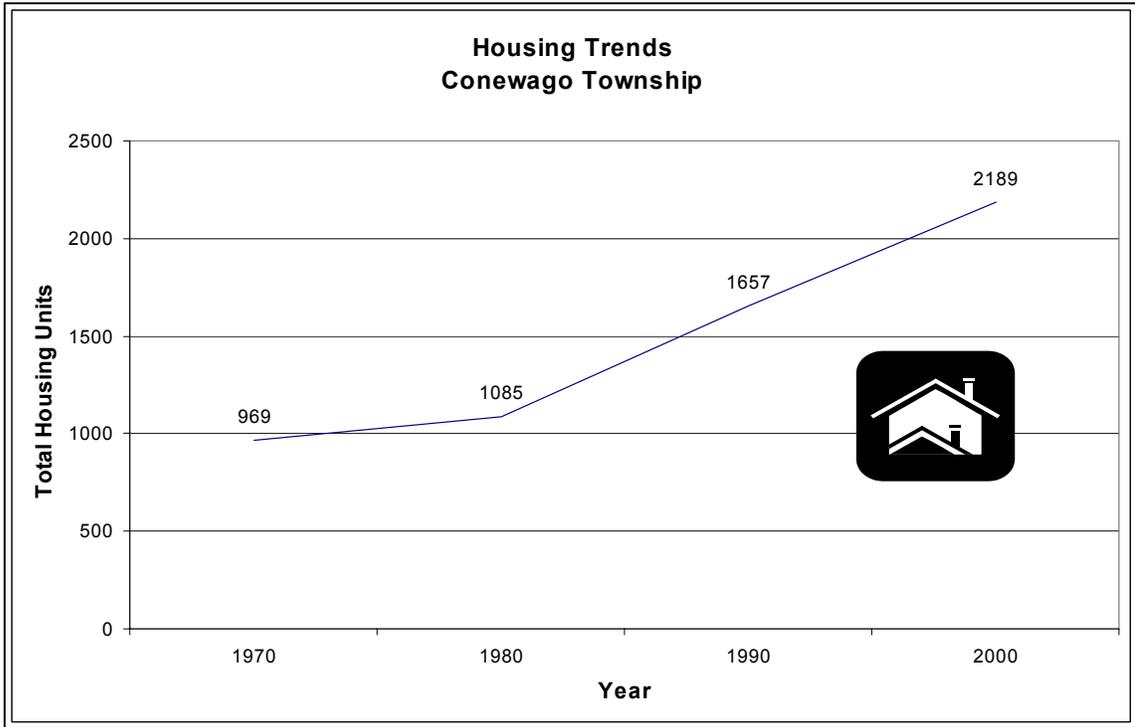


Over the last 50 years, the Township’s proportion of population relative to the total population within Adams County has ranged between a low 4.9 percent in 1980 to the high 6.3 percent in year 2000. During the last 50 years the Township’s proportion of the County’s population has averaged 5.72 percent; however, since 1980, the average has been just over 6 percent.

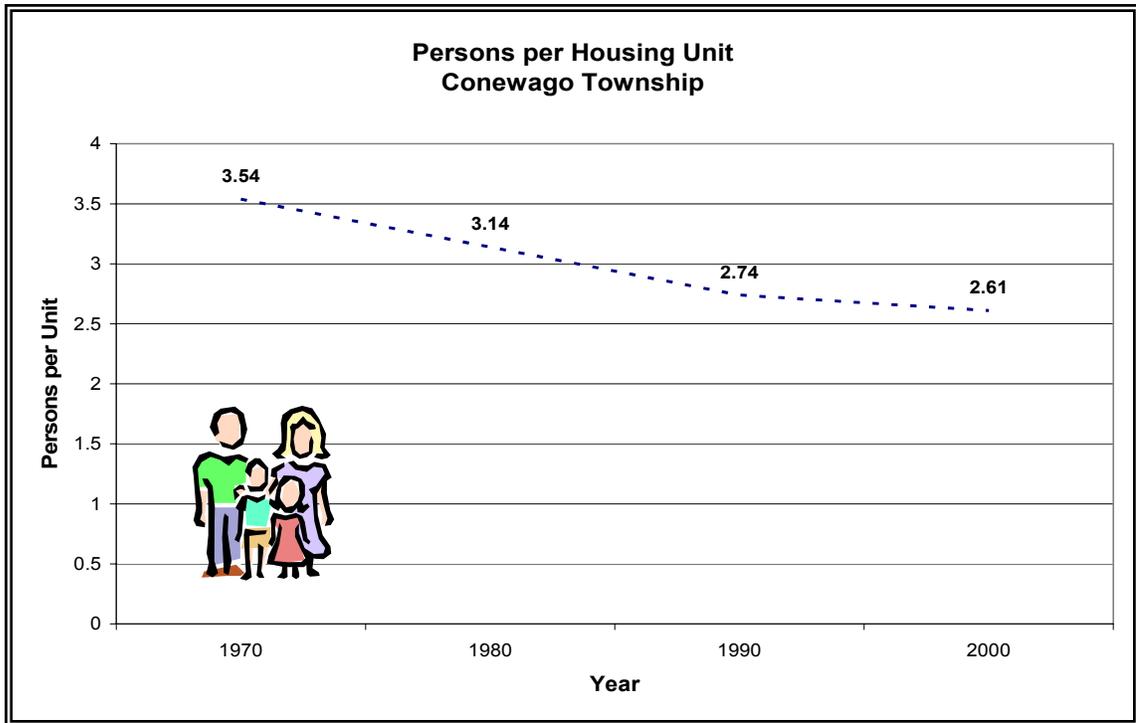
Obviously, both the Township and Adams County have grown considerably since 1980 and these trends suggest that it will continue to gain new residents. This trend is typical within the region as most rural and suburban townships share considerably within a County’s population growth. Although the Township’s proportion of County population recorded its highest level in 2000, its rate of increase was less than that experienced during the 1980s. This more recent trend may suggest that Conewago Township will continue to experience the development pressures exerted throughout Adams County, but to a lessening extent.

B. Historic Housing Growth

In addition to population growth, another important consideration when projecting how fast an area will grow relates to its number of housing units. The following graphs the number of housing units within The Township since 1970.



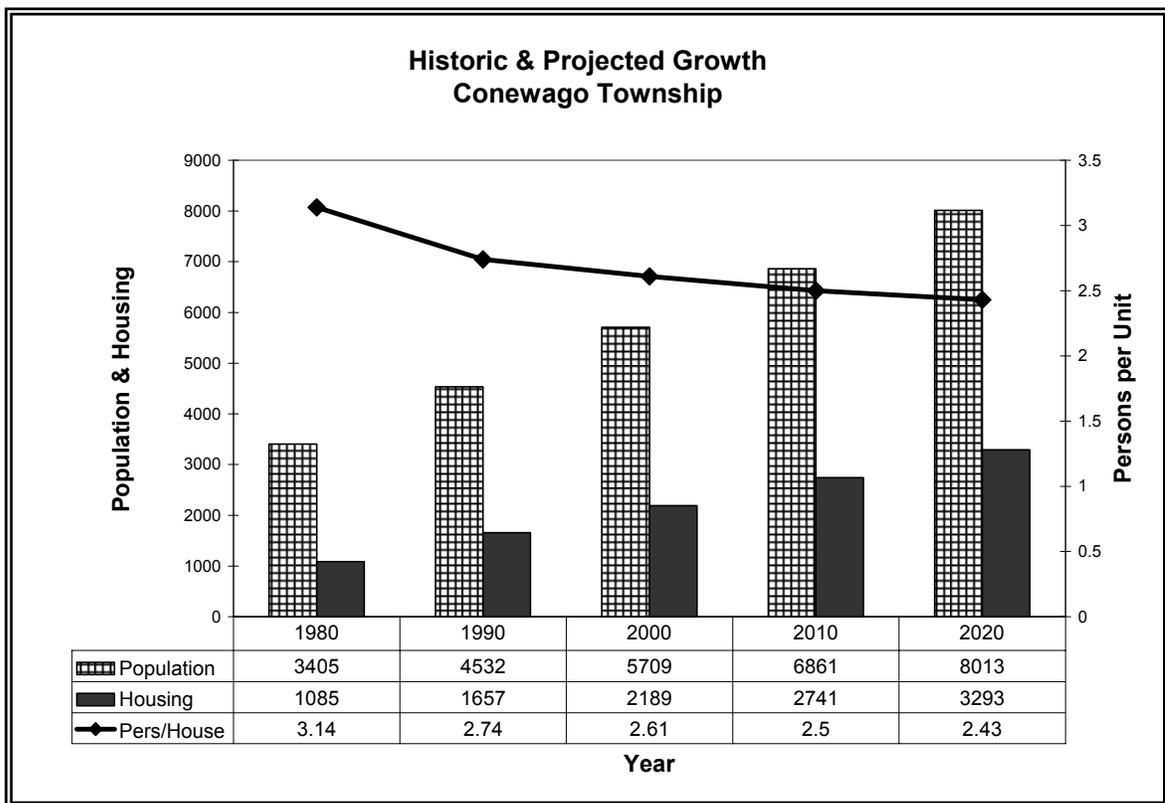
Unlike the Township's population which experienced a slight decline during the 1970s, the number of housing units has experienced growth during each decade during the last 30 years. But more importantly, the rate of change for housing units is greater than that recorded for population. Between 1970 and 2000, the Township's population grew by 66.4 percent; however, its housing stock increased by 126 percent. This occurred because fewer people are living together, as family sizes have decreased, more single elderly and more people are living by themselves. This trend has also occurred throughout Adams County as a whole and throughout the nation for several decades.



C. Population & Housing Projections

Review of the population and housing trends for the Township over the last two decades reveals a very uniform and steady rate of population and housing growth. This suggests that an arithmetic or linear extrapolation should produce reliable predictions of future population increase if outside influences are not permitted to affect development within the Township. While this technique is considered one of the most basic of projection techniques, it also is one of the most powerful as it considers all of the factors that have affected past growth. For these reasons the linear projections for years 2010 through 2020 will be used to allocate the Township's resources through the balance of this Plan.

As can be seen in the following graph, a "natural" growth curve extends for both the population and housing bars between the historic rate experienced since 1980 through the projected growth to the year 2020. Similarly, the descending line depicting the reducing average household size also follows a "normal" curve since the large reduction experienced during the 1970s. The table below the graph depicts the net projected changes to population, housing and persons per housing units, for the Township through the year 2020.



Projected Net Changes Per Decade		
Year	2000 to 2010	2000 to 2020
Population	1152	2304
Housing	552	1104
Persons/Unit	-0.11	-0.18

D. Socio-Economic Characteristics (2000)

Age Profile		
Age Group	Conewago Township	Adams County
0-4 yrs	355 (6.2%)	(5.9%)
5-9 yrs	408 (7.1%)	(7.1%)
10-14 yrs	461 (8.1%)	(7.6%)
15-19 yrs	382 (6.7%)	(7.5%)
20-24 yrs	262 (4.6%)	(6.1%)
25-64 yrs	3180 (55.7%)	(51.9%)
65+ yrs	661 (11.6%)	(13.9%)
Median Age	36.5 years	37.0 years

Comments: Overall, the Township population has a median age 0.5 years younger than that of Adams County. The Township has slightly more infants and middle school-age children, but less high-school age children than Adams County. It has fewer young adults but more middle-age adults. The Township has fewer seniors than does Adams County as a whole.

Gender Profile		
Gender	Conewago Township	Adams County
Male	2787 (48.8%)	49.1%
Female	2922 (51.2%)	50.9%

Comments: The Township has more females than males and even greater disparity than that found throughout the whole County..

Racial Composition & Hispanic/Latino Origin		
Race	Conewago Township	Adams County
White	5,590 (97.9%)	(95.4%)
African American	30 (0.5%)	(1.2%)
Native American	2 (0%)	(0.2%)
Asian	9 (0.2%)	(0.5%)
Pacific Islander	0 (0%)	(0.0%)
Other	44 (0.8%)	(1.7%)
Bi-racial	34 (0.6%)	(1.0%)
Hispanic/Latino	90 (1.6%)	(3.6%)

Comments: Overall the Township has less racial diversity than does Adams County. In total minorities comprise about 2.1 percent of the Township's population as compared with 4.6 percent of the County's makeup. Similarly, the Township has fewer residents of Hispanic/Latino descent numbering about 44 percent the proportion recorded throughout Adams County.

Income				
Area	Per Capita	Median Family	Median Household	Persons Below Poverty
Conewago Township	\$18,434	\$49,688	\$47,920	212 (3.8%)
Adams County	\$18,577	\$48,810	\$42,704	(7.1%)

Comments: Per capita incomes within the Township are slightly lower than the Countywide average. However, median family and household incomes within the Township are above the Countywide average. Township officials should make sure that opportunities for affordable housing are provided within the Township so as not to exclude individuals, families and households with modest incomes. The Township has relatively less poverty than the whole County and considerable less than that across Pennsylvania which is about 11 percent. Nonetheless, special outreach opportunities and programs should be targeted to assist less fortunate individuals and local officials should be mindful of these limited incomes when planning for costly public infrastructure and services.

Education		
Area	High School Diploma	4+ Year @ College
Conewago Township	52.0%	9.8%
Adams County	43.8%	10.1%
Pennsylvania	81.9%	22.4%

Comments: Both Conewago Township and Adams County have educational attainment rates considerably below the State-wide averages.

Employment Status & Commuting		
	Conewago Township	Adams County
Total Labor Force (16+ yrs.)	3,190 (73.9%)	(67.8%)
Employed	3,157 (73.1%)	(64.87%)
Unemployed	33 (0.8%)	(2.9%)
Carpooled	293 (9.5%)	(10.5%)
Public Transit	20 (0.6%)	(0.2%)
Average Commute	20.1 mins.	25.1 mins.

Comments: The Township has a higher percentage of workers than does the County who are largely employed. Unemployment is considerably lower within the Township than throughout Adams County. Carpooling is relied upon about the same within the Township when compared County-wide while the use of mass transit is slightly more prevalent within the Township. Average daily commutes are shorter than throughout the County because of the Township's proximity with large local employers. Nonetheless, the Township should promote local employment opportunities close-to-home to reduce wasteful daily commuting.

Civilian Labor Force - All values are expressed as percentages of the overall labor force.		
Occupation	Conewago Township	Adams County
Agriculture, forestry, fishing, hunting, mining	2.0	3.1
Construction	6.4	8.0
Manufacturing	28.5	22.6
Wholesale trade	4.5	3.8
Retail trade	14.7	11.7
Transportation, warehousing, utilities	3.6	4.2
Information	3.3	2.6
Finances, insurance, real estate	2.3	3.7
Professional, scientific, management, waste	3.6	4.9
Educational, health, social services	15.8	18.7
Arts, entertainment, recreation, lodging, food	5.6	7.5
Other services	7.2	4.4
Public administration	2.5	4.3

Comments: Overall the Township exhibits a more specialized mixture of employment than Adams County as a whole. Manufacturing, education, health and social services and retail trade are the three top employers within Conewago Township and in Adams County and fewer people are engaged in other activities within the Township than is typical in Adams County. Agriculture and other rural occupations are the smallest single economic sector offering employment to Conewago Township residents at a level only 2/3 the Countywide average. The Township has a slightly lower concentration of construction workers who tend to favor rural home sites where on-site storage of equipment and supplies can occur. Employment often occurs in other nearby communities where focused activity centers exist. Nonetheless, State law requires that the Township accommodate a wide range of commercial and industrial pursuits to serve its labor force.

Housing & Household Characteristics		
Other Characteristics	Conewago Township	Adams County
Group Quarters	7 (0.1%)	(4.0%)
Family Households	1,655 (77.8%)	(73.6%)
Rental Units	367 (17.2%)	(23.2%)
Vacant Units	61 (2.8%)	(6.1%)

Comments: As expected the rural/suburban character of the Township does not lend itself to group quarter residences and the Township's percentage of population within group quarters is minimal. The Township has a higher percentage of family households than does Adams County. The Township has a lower number of rental housing units and vacant housing units than averages throughout the County.

Housing Costs		
Area	Median Monthly Rental Costs	Median Owner-Occupied Housing Values
Conewago Township	\$564	\$104,400
Adams County	\$509	\$110,100

Comments: Given the Township's rural / suburban character it is surprising that its owner-occupied housing stock comes at less expense than other areas within Adams County. Its renter occupied monthly rents are higher than the Countywide average. The Township needs to ensure that its zoning policies adequately provide opportunities for affordable forms of housing.

Housing Condition				
Area	Units Lacking Complete Plumbing	Units Lacking Complete Kitchen	Built Pre-1940	Median No. of Rooms
Conewago Township	9 (0.4%)	15 (0.7%)	487 (22.5%)	6.0
Adams County	(0.5%)	(0.4%)	(25.5%)	5.9

Comments: The Township has a few reported substandard housing units and more than 22 percent of the Township's homes were constructed before 1940. This suggests the potential for an important historic preservation program to protect these valuable cultural resources.

Housing Tenure & Vacancy				
Area	Owner-occupied Units	Owner-occupied Vacancy Rate	Renter-occupied Units	Renter-occupied Vacancy Rate
Conewago Township	1761 (82.8%)	1.2%	367 (17.2%)	2.1%
Adams County	(76.8%)	(1.4%)	(23.2%)	(4.6%)

Comments: Homeownership is very high within Conewago Township while the ratio of rental units is about 3/4 the County-wide average. Owner-occupied vacancy rates are very low in both the Township and Adams County. The Township's low number of rental units and its low vacancy rates suggest the need to ensure that the Township's zoning policies do not discriminate against low-moderate income forms of housing which are often rental units.

Housing Type					
Area	Single-family Detached	Single-family Attached	Two-family	Multiple-family	Mobile Home
Conewago Township	1638 (75.8%)	322 (14.9%)	116 (5.4%)	47 (2.2%)	33 (1.5%)
Adams County	(72.2%)	(6.7%)	(4.5%)	(7.9%)	(8.7%)
Comments: As can be seen, the Township exhibits a slight preference towards single-family detached housing when compared with Adams County as a whole. Even more prominent is the Township's share of attached housing at more than twice County-wide average. This is somewhat offset by the Township's relative lack of multiple-family dwelling units and mobile homes. In an event, the Township must provide for its fair share of a wide range of housing types; therefore, future residential growth areas must offer the opportunity for a more balanced mix of housing including multiple family dwellings and mobile home units.					

In order to avoid claims of exclusionary zoning practices and to reflect contemporary housing styles, it is recommended that the Township specifically plan to rely less upon single-family detached units in the future. In addition national housing trends suggest greater reliance on more dense/multi-family units and compact detached units. For these reasons it is recommended that the Township allocate future land use to meet the target growth in the following residential categories:

TARGET PROJECTED NEW HOUSING UNITS BY STRUCTURAL TYPE				
Total Units 2007-2020	Target single-family detached	Target attached & duplex	Total multi-family	Mobile Homes
718	+503 = (70%)	+ 108 = (15.0%)	+ 54 = (7.5%)	+54 = (7.5%)

Methods to achieve this mix of future housing are presented in Chapter 10 of this Plan.

V. Existing Land Use

For a land use plan to be practical, it must accurately inventory existing land uses and development characteristics. Then, with proper analysis, future land use schemes can reflect reality, and avoid the creation of nonconforming uses when implemented through zoning regulations. To determine existing land uses, three sources were consulted. First, Adams County has prepared a GIS coverage for its tax parcels that includes a land use code. Such information was used as a basis for initial determination of land use.

Next, wooded land cover was derived from digital aerial photograph also developed as part of the Adams County GIS database (see adjoining image). This information was superimposed over the tax parcel data so that underlying land use categories could still be identified. These digital orthophotos were flown in 2003 and were also useful in determining the extent of rural land uses in the field.

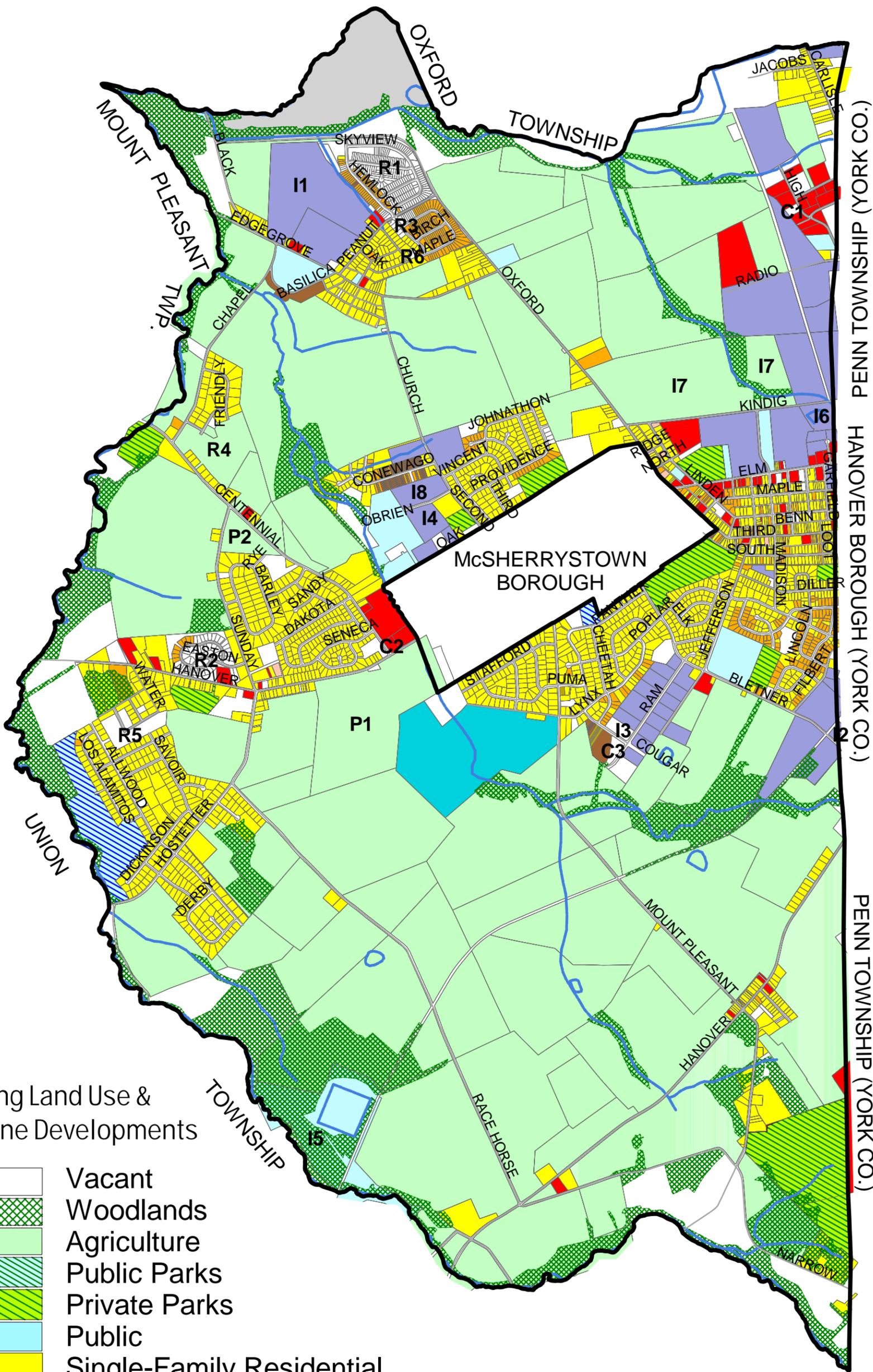
Finally, this GIS data was field verified/corrected via a windshield survey conducted in August 2007 with assistance from the Township Zoning Officer.

As can be visualized in the adjoining aerial photograph,

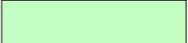
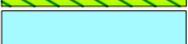
overall the Township's land use pattern remains largely rural. However as is typical across the nation, some suburban expansion has occurred around the periphery of both Hanover and McSherrystown Boroughs. In addition some "leapfrog" subdivisions are developing along the



2003 Aerial Photograph of Conewago Township.



Existing Land Use & Pipeline Developments

-  Vacant
-  Woodlands
-  Agriculture
-  Public Parks
-  Private Parks
-  Public
-  Single-Family Residential
-  Duplex
-  Multi-Family Residential
-  Commercial
-  Industrial
-  Quarry
-  Airport
-  Pipeline Development (see page 55 in Plan)



Conewago Township
Adams County, PA



MOUNT PLEASANT TWP. OXFORD TOWNSHIP
 PENN TOWNSHIP (YORK CO.) HANOVER BOROUGH (YORK CO.)

northern and western borders of the Township. Residential uses and designs vary widely but most are single-family detached dwellings. The Township has also developed sizable industries many of which relate to the large quarry located in the extreme northern reaches of the Township, but mostly located in adjoining Oxford Township. Other large industries relate to corporations mostly located in adjoining Hanover Borough (Utz's and Clark Shoes). The Hanover Airport is also centered within the Township just south of McSherrystown Borough.

The following describes each of the land use categories reflected on the Existing Land Use Map.

Woodland

This land use category is derived from 2003 aerial photography to superimpose areas with significant concentrations of woodlands. As can be seen of the Existing Land Use Map, the vast majority of the Township's landscape has been cleared of trees. The Township's limestone geology produces a fertile landscape that prompted settlers to remove trees in favor of annual crop yields. In turn woodlands are almost entirely limited to less productive areas of steep slope and/or straddle the Township's various waterways. The largest concentration of woodland



Largest Woodlands within Conewago Township Around the Hanover Municipal Water Works Properties

occurs in proximity with the Hanover Municipal Water Work's Well No. 2, Water Filtration Plan and Kitzmiller Diversion Dam. Borough Officials hope that Conewago Township will encourage the retention of wooded buffers around public water wellhead sources and along its various waterways. More information on this subject is contained in Chapter VII of this Plan.

Agriculture

This category is by far the single largest of land use within the Township. As described above, in the past settlers cleared fertile farmlands of wooded cover to produce needed annual crops. Consequently, most of the Township's farmlands are located within the Conestoga geologic formation with its fertile limestone derived soils; however, agriculture reaches throughout the entire landscape. Areas located in close proximity of north of McSherrystown Borough tend to be flatter while those extending in the south exhibit more rolling topography.



Flat cropland located to the north of Conewago Drive

Croplands dominate the landscape except within the southern areas of the Township. Here horse and cattle operations exist. No concentrated animal feeding operations were noticed.

Of particular note are the large holdings of various corporate entities and others which comprise about half of all farms within the Township. First the Hanover Shoe Farms owns many farms located in the southwest corner of the Township. These holdings are used primarily in the raising and training of races horses, some of which achieved recent success.

Adjoining these, the Utz Potato Chip Company also owns several farms generally southwest of McSherrystown Borough. To the north of the Borough, the Roman Catholic Clergymen owns three large farms one of which extends into adjoining Mount Pleasant Township. In this same vicinity, Radio Hanover owns several farms straddling Oxford Road just south of the Township Office. Finally, Hanover Borough has several smaller farms scattered throughout the Township which appear premised upon their various public utility system facilities.



Horse Stables of the Hanover Shoe Farms

Although the Township has undergone some considerable suburbanization, sizeable masses of farmlands still remain which can operate at some distance from new subdivisions. However,

unless suburban residential development patterns are changed, this condition will not survive until the next planning cycle and farms will be forced out.

Public and Private Parks

Conewago Township possesses three public parks. At this time only one of these parks is developed – Cheetah Park. Cheetah Park is a 5.35 acre site located at the end of Cheetah Drive within the Preserves subdivision and adjoining the south side of McSherrystown Borough. It contains one tennis court, a baseball field, a big-toy playground, picnic tables and benches and a parking lot. It is proposed for a full compliment of facilities as further described in Chapter VII of this Plan.



Cheetah Park – A 5.35-acre Neighborhood Park Owned By Conewago Township

The Township also owns another larger park. Allwood Manor Park is located between Allwood Manor subdivision and the South Branch of the Conewago Creek. This 46-acre park is undeveloped and includes large drainage basins for the area plus creek frontage. A recently completed study suggests this park for various athletic fields and courts along with a protected wetland.

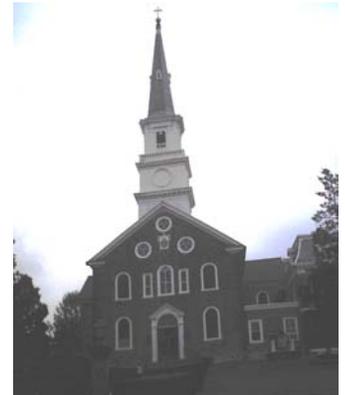
In addition, the following “private” (not Township owned) parks were identified during the field survey:

“Private” Park Name	Location
American Legion “Diller” Ballfield	North side of Blettner ave
Brushtown Athletic Association	South side of Hanover Road
Clarks Softball Field	South of Kindig lane
Conewago Chapel Picnic Grove	South side of Centennial road
Conewago Elementary School	North side of Elm avenue
Delone Catholic Athletic Fields	Northeast side of Blettner ave
Hanover Park	Just south of Loot Alley adjoining Borough
McSherrystown Playground	South of Providence drive
Neiderer’s Pool	West of 2 nd Street
South Hills Golf Course	East of Mount Pleasant Road

Public

Within the Township there are many “public” land uses. These include properties of the government like the Township Building and those owned by Hanover Borough (Water Works, sewage treatment plant, recycling center, etc.) Public uses also include those associated with churches, cemeteries schools, and smaller utilities. Large utility sites with major impact have been placed within the Industrial category (e.g. Met Ed Station located along Radio Road).

Probably the most notable of public land uses is the Conewago Chapel located along Basilica Road in the northwest corner of the Township. This historical landmark is the oldest stone Catholic Church building east of the Mississippi River in the United States, dating back to 1787. As was customary in those times, churches were often sited atop the most prominent location within a community so that all could be ever mindful of his/her faithful responsibilities. This site affords such a vantage throughout much of Conewago Township and beyond.



Conewago Chapel

Single Family Residential

Conewago Township has a wide range of residential land uses and styles. Unsurprisingly, a majority of these occur as single family detached dwelling units.

First the Township contains the older narrow and deep lots located within the Villages of Edgegrove, Midway and Mount Pleasant. Here, single family homes set amid other civic and higher density residential land uses and even some commercial and apartment conversions. These areas predate zoning and front and side yard setbacks are minimal. In many cases driveways are absent in favor of rear yard garages and parking spaces off of alleys. Given the age of these areas and their mixed use settings, site maintenance varies widely. Some properties could benefit from the removal of junk and debris.



Indian Ridge Subdivision

The following presents typical design standards that most detached dwellings would satisfy within each of these older villages:

Typical Design Standards for Single-Family Detached Dwellings in Older Villages				
Location	Lot Width	Front Setback	Side Setback	Parking Location
Edgegrove	50 ft.	12 ft.	8 ft.	rear yard
Midway	25 ft.	10 ft.	5 ft.	rear yard
Mount Pleasant	40 ft.	10 ft.	5 ft.	rear yard

Next the Township has a variety of more spacious suburban subdivisions like Allwood Manor, Murren Manor and Indian Ridge. These developments seem to follow zoning conventions and

design with varying streets and sidewalks. Here lots are usually between 8,000 and 20,000 square feet.



Almost without exception front yard driveways offer off-street parking but on-street parking is usually permitted. These developments are newer and exhibit good to excellent site maintenance. Some storage of recreational vehicles was observed both within driveways and upon the street.

The following presents typical design standards that most detached dwellings would satisfy within each of these suburban subdivisions:

Typical Design Standards for Suburban Single-Family Detached Dwellings				
Location	Lot Width/Depth	Front Setback	Side Setback	Parking Location
Allwood manor	100/150 ft.	50 ft.	10 ft.	Front driveway
Diller Road	60/140 ft.	30 ft.	5 ft.	Front driveway
Indian Ridge	80/105 ft.	20 ft.	5 ft.	Front driveway
Murren Manor	100/200+ ft.	50 ft.	10 ft.	Front driveway
The Preserves	90/130 ft.	25 ft.	10 ft.	Front driveway
Sherry Village	75/120 ft.	20 ft.	5 ft.	Front driveway

Finally, the township has considerable scattered “strip” roadside housing throughout its rural landscape. This rural housing also contains many home and rural occupations that provide for close-to-home employment opportunities. Generally, rural homes are well-kept aside from an occasional mini-junkyard and the outdoor storage associated with a contractor’s rural occupation. In addition, periodic sales of personal property are typical roadside activities that are often resisted in tightly-managed neighborhoods. However, within Conewago Township’s rural landscape, these are normal activities that appear to be tolerated and welcomed.

Many residents have boats, yachts, trailers and recreation vehicles. Elsewhere, the parking and storage of these possessions often poses safety and compatibility problems for suburban neighborhoods and are strictly regulated. Within rural portions of Conewago Township, again residents expect such behavior and uses which reduce the cost of ownership and make access convenient for a “quick-trip” to the woods or the lake.

Duplex Residential



Duplexes along 3rd Street

Conewago Township has a surprising number of duplexes accounting for nearly 17 percent of its total dwelling units. For the purposes of this analysis, duplexes include any dwelling containing two units either “side-by-side” or “over-and-under” in configuration.

As expected some duplexes are located amid the tightly-knit mixed use neighborhoods within Midway. These older lots again tend to be more narrow and deeper than their suburban counterparts. Setbacks are minimal and only afford pedestrian access between the front and rear yards; no usable side yard space is provided. Here duplexes are sparsely scattered.

By contrast, newer and ongoing

subdivisions feature greater concentration of duplexes. Neighborhoods along Lincoln Drive, Filbert Street and Sycamore Lane all contain duplexes built in the late 1980s. The ongoing developments of Chapel Ridge, Oak Hill, Villas at Cattail, and Conewago Drive are all built according to the Township’s zoning regulations. The following presents observed and applicable design standards for duplexes:



Newer duplexes along Sycamore Lane



Ongoing development of Chapel Ridge with a combination of duplexes and multi-family dwellings

Typical and Required Design Standards for Duplex Dwellings				
Location	Lot Width/Depth	Front Setback	Side Setback	Parking Location
Third Street	18/180 ft.	0 ft.	2 ft.	Rear alley
Sycamore Lane	65/110 ft.	20 ft.	25 ft.	Front & side driveway
R-2 Zone, no public utilities	120/150 ft.	35 ft.	35 ft.	Not specified
R-2 Zone, public water	100/120 ft.	35 ft.	25 ft.	
R-2 Zone, public sewer	100/120 ft.	35 ft.	25 ft.	
R-2 Zone, both public utilities	65/100 ft.	25 ft.	15 ft.	
R-3 Zone	20/125 ft.	40 ft.*	10 ft.	
* 25 ft. for attached garages				

Multi-Family Residential

Unlike in the case of duplexes, Conewago Township lacks multi-family dwelling units given its size and population. Only 57 dwelling units or 2.2 percent of the total housing stock is contained within buildings that contain three or more dwelling units (garden apartments, townhouses, row homes, hi-rise, etc.) These few units are located in three separate locations.

First, Conewago Drive is a higher density neighborhood with contemporary townhouses and a few scattered duplexes. Here lots are a minimum of 18 feet wide and 200 feet deep. Front yards are 40 feet deep generally with a 2-car wide driveway. Driveways are located close together among two adjoining lots so as to afford space for one off-street parking space at end units. End units have 25 foot wide setbacks.



Townhouses along Conewago Drive

Next a new 3-story multi-family building (Sunset Vista) and two groupings of 8 townhouses have been recently constructed at the southern end of Cheetah Drive. The 3-story building was apparently requested as a “hotel”; however, it appears to be a 3-story garden apartment building or perhaps a boarding house. **The Township should**



Sunset Vista multi-family dwelling

resolve any zoning interpretation issues regarding this subject so that this use will be properly regulated as a multi-family dwelling unit rather than a “hotel.”

Last, Chapel Ridge, as pictured earlier, is to blend townhouses and duplexes for the largest concentration of multi-family dwelling units within the Township. This development has adhered to the prevailing zoning ordinance requirements in effect.

Commercial

The Township has relatively little commercial development given its size and population. Undoubtedly this fact results from the abundance of commercial uses located in adjoining municipalities that lie just beyond the Township boundaries; these offer ready access to Township residents. Many freestanding businesses are scattered across the Township; these often appear to be nonconforming uses given their unusual location next to residences and their poor site design. Numerous auto repair and body shops dot the landscape in both rural and urban settings. The Township should continue to treat these uses as nonconforming to encourage their relocation and or improvement over time.

Aside from these scattered businesses the Township has a few concentrations of commerce.

First, in Midway, Elm and Third Streets contain concentrations of retail businesses that have evolved within this mixed use area. Here are located auto filling and repair, towing and body shops, a car wash, offices, truck cap sales, taverns, restaurants, offices, a dentist, floor covering sales, a skating rink, a laundromat, printing shop, photo studio and etc. A larger lighting store is located nearby on the south side of Kindig lane. For the most part these uses occur as freestanding businesses that lack contemporary commercial site design features. Two exceptions are noteworthy. Located at the intersection of Elm and Linden avenues are Felch’s Plaza and Linden Mill Center. These small-scale neighborhood based shopping centers feature shared parking and access along with coordinated signage. These are good examples of what the Township should seek to achieve along these challenging busy corridors.



Linden Mill Center is a good example of adaptive reuse of an older commercial area along a busy highway.

Second, another concentration of recently developed commerce exists straddling High Street in the northeast corner of the Township. In this vicinity retail uses appear to be premised upon nearby Carlisle Pike in York County. Here can be found auto dealerships, an archery center, health clinic, music store, bank, hobby shop, day care, lighting store, as well as several strip centers with a print shop, glass and mirror shops a notary, salon, chiropractor, mortgage office, tanning salon, credit

union, learning center and physical therapist. This area tends to feature higher site design with most contemporary amenities; however, landscape strips and islands lack trees and shrubs.

Last, a combination grocery and variety store are located just west of McSherrystown Borough within a small shopping center. It would appear that a branch bank is under development as a freestanding pad site. This site features shared access, loading, parking, stormwater management and signage. Again, the site could benefit from increased landscape materials to define travel lanes, reduce thermal pollution and soften the appearance of the expansive parking lot.

Industrial

Compared with commercial land use, the Township has an abundance of industry. Overall the Township has five sizable industrial areas. The largest single use is the Conewago Enterprises site located between the Village of Edgegrove and the Hanover Quarry in the northwest corner of the Township. This site also houses a steel systems and related engineering company but the site is dominated by its pre-cast concrete operation. The site could benefit from denser screening along its southwestern border where it adjoins residence within Edgegrove.



Conewago Industries is the largest single industry within the Township producing pre-cast concrete.

Next several larger industries and smaller uses can be found along Kindig lane and extending north along High Street. This area adjoins with the Carlisle Pike in York County. Here are located Clarks Shoes, Utz Potato Chips, Emeco Industries, Shipley Bulk Fuels, Lenhardt Manufacturing and Stambaugh Metal Incorporated. This area is well separated from adjoining homes but outdoor storage and loading areas should be screened from adjoining roads.



Clarks Company Shoe Factory located along Kindig Lane has an adjoining softball field.

North of McSherrystown Borough is a small node of industry straddling Church Street. Here can be found Say Plastics, LAMCO Industries, Binary Arts, Think Fun, Colonial Fiberglass, Wilke Engineering, Propac and Klunk Electrical Contractor. For the most part these uses have tidy sites which is fortunate given their proximity with adjoining residences along Conewago Drive and within Sherry Village. In any event, screening should be added along these vulnerable residential boundaries.

South of the Preserves along Ram Drive, is another concentration of industry. This area contains an insurance office, welding supply company, Precision Cut, Inc., a machine shop, Johnson Steel Rule Die Co., Myers Lumber, Milling and Homes Manufacturing, a Rent All, Klunks Greenhouse and Hanover Concrete. As can be seen in the adjoining aerial of this vicinity, those uses located on the west side of Ram Drive maintain a large setback from the adjoining homes to the northwest. Nonetheless, screening should be added as new plans are submitted. In addition, most of the outdoor storage of materials within this area occurs with the lumber yard and its related uses all of which are located along the east side of Ram Drive.

The final industrial node is located straddling Blettner Avenue along the Township east central border with Hanover Borough. Here are located Sealed Air, Recycling Technical Inc., McClarin Plastics, a truck storage lot for Jananco Industries and a machine shop. This area connects with a larger industrial area extends east into the Borough. Filbert Street separates a residential neighborhood from the Recycling Technical Inc. site; however, vegetative screening should be added to buffer the industry's outdoor truck storage area that is directly opposite the front yards of these homes.

Like with the Township's widely scattered commercial uses, the Township should continue to regulate the few freestanding



Industry along Ram Drive



Truck storage across Filbert St. from homes.

industries as nonconforming uses. In so doing, these sites can be improved with better design as adjustments and expansions are proposed. Conversely, should these uses fail, they can revert back to a more compatible use given their respective settings.

It is important to note that limited rural and farm occupations that were observed to be accessory to a principal form or rural residence were not included within this land use category. Instead, these accessory businesses were classified with the principal land use (e.g. farm or residence).

Quarry

Within the extreme northern reaches of the Township lies the Hanover Quarry. This massive deep pit operation affords valuable needed building materials locally and offers demand for a variety of industries within the Township and beyond. There appears to be some confusion about whether or not the Quarry is actually located within Conewago Township. This confusion stems from the fact that the Township’s adjoining boundary was based upon an historic alignment of the unnamed tributary to the South Branch of the Conewago Creek. The massive excavation that has taken place here has caused this natural watercourse to be diverted to a man-made concrete swale which shifts the original flow further south. In any event, the basemap for this project relies upon the GIS plotting of the historic watercourse and therefore depicts portions of the quarry within the Township. The quarry has provided considerable buffering, screening and berming which protects adjoining areas within the Township from immediate impacts.

Pipeline Developments

In planning for future land uses, and calculating acreage needed to accommodate projected growth, it is important to know the location and types of developments within the Township that have been approved for development, but have not yet been fully developed. This information will also ensure that future planned uses are consistent or compatible with those already approved for construction. The following lists, by municipality, that development which has been submitted for approval and not yet constructed:

PIPELINE DEVELOPMENT PROJECTS		
Development Name	Map No.*	Uses Yet To Be Built
Chapel Ridge II	R1	96 duplexes / 1 single family detached
Villas at Cattail	R2	42 single family detached
Oak Hill Phases 1 & 2	R3	56 duplexes / 13 single family detached
Chapel View Phase 2	R4	38 single family detached
Allwood Manor Phase V	R5	31 single family detached
Conewago Heights	R6	5 single family detached
Trummer DDS	C1	Construct dentist office
Community Banks	C2	ATM kiosk

PIPELINE DEVELOPMENT PROJECTS		
Development Name	Map No.*	Uses Yet To Be Built
Sunset Hotel	C3	34-room hotel
Conewago Resources Pre-Cast	I1	40,000 sq ft pre-cast manufacturing plant expansion
McClarin Plastics	I2	2,440 building expansion
RX Systems	I3	24,000 square foot pharmaceuticals packaging plant
Wilke Enginuity	I4	12,000 sq. ft. building expansion
T-Mobile	I5	170 foot cell tower
Shiple Energy	I6	Office and other uses building
Clarks Co. North America	I7	Construct warehouse and offices
Eash Family Partnership	I8	11,000 sq. ft. warehouse expansion
SAVES	P1	Construction of Fire and EMT station
Hanover Community Church	P2	New church

*The above map numbers are depicted on their respective properties on the Existing Land Use.

VI. Adjacent & Regional Planning

The preparation of any comprehensive plan must always consider and, if possible, complement the planning policies in effect in adjoining communities. The highest level of consideration could include a cooperative planning effort of several adjoining municipalities, such as that of a Regional Comprehensive Plan. At a minimum such effort should seek to coordinate land use activities across municipal boundaries to assure compatibility and function. This Chapter presents this analysis and findings of general consistency with the stated planning policies of Adams County for the Township.

A. PLANNING / ZONING IN ADJACENT MUNICIPALITIES

The Adjacent and Regional Planning Map, on the next page, depicts the planned land uses in municipalities that adjoin the Township. As can be seen, many adjoining areas also recognize the rural/natural features of the Township. Likewise, the existing land uses that abut the Township in other Townships are also very rural in character. The Future Land Use Plan reflects these rural conditions with similar designations contained within Conewago Township. Planned residential uses abutting the Boroughs of Hanover and McSherrystown are also consistent with the existing and planned uses contained within the Boroughs. The following is a brief summary of those land uses planned for each municipality within Adams County bordering the Township.

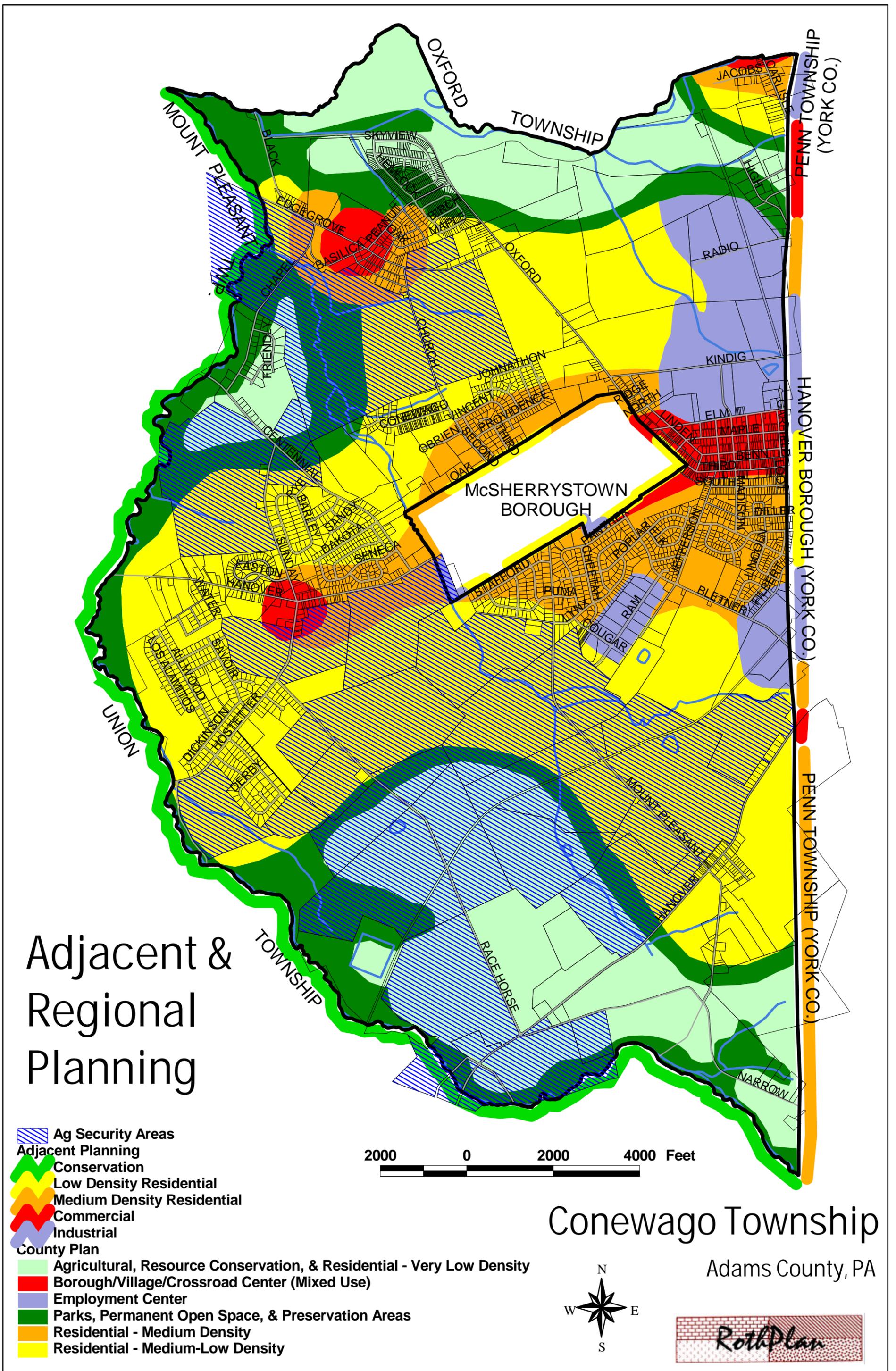
McSherrystown Borough (Adams County) – Conewago Township completely surrounds McSherrystown Borough. The Borough has no comprehensive plan but has a zoning ordinance. Therefore, the Zoning Map was used as a basis for determining the Borough's land use intentions as they adjoin Conewago Township. Unsurprisingly, Borough zoning boundaries generally follow the pattern of existing land uses. Generally the Borough has residential zoning around its periphery adjoining Conewago Township except for the:

1. Commercial Zone straddling Main Street;
2. Industrial Zone located on the west side of 4th Street;
3. Institutional Zone for the St. Joseph's Academy; and,
4. Industrial Zone located in the southwest corner of the Borough.

Mount Pleasant Township (Adams County) – Adjoining the Township to the northwest is Mount Pleasant Township. The Bonneauville Borough and Mount Pleasant Township Comprehensive Plan is dated October, 2003 was prepared by local officials with assistance from Urban Research and Development Corporation. The entire common length with Conewago Township is depicted within the Conservation Corridor future land use category. This designation appears to be based upon the desire to preserve a thickly-forested riparian buffer along the South Branch of the Conewago Creek. It is noted that Mount Pleasant Township and Bonneauville Borough are in the process of developing a new regional comprehensive plan with assistance from the Adams County Office of Planning and Development.

Oxford Township (Adams County) – Oxford Township has no Comprehensive Plan, nor Zoning Ordinance. It is noted that Oxford Township is in the process of developing a zoning ordinance.

Union Township (Adams County) – Adjoining the Township to the southwest is Union



Adjacent & Regional Planning

-  Ag Security Areas
-  Adjacent Planning
-  Conservation
-  Low Density Residential
-  Medium Density Residential
-  Commercial
-  Industrial
-  County Plan
-  Agricultural, Resource Conservation, & Residential - Very Low Density
-  Borough/Village/Crossroad Center (Mixed Use)
-  Employment Center
-  Parks, Permanent Open Space, & Preservation Areas
-  Residential - Medium Density
-  Residential - Medium-Low Density



Conewago Township

Adams County, PA



Township. The Union Township Comprehensive Plan is undated and was prepared by local officials with assistance from Herbert Rowland and Grubic. The entire common length with Conewago Township is depicted within the Resource Protection and Conservation future land use category. This designation appears to be based upon the desire to preserve a streamside corridor of open space along the South Branch of the Conewago Creek. It is noted that Union Township is cooperating with Germany Township and Littlestown Borough in the development of a new regional comprehensive plan with assistance from the Adams County Office of Planning and Development.

Hanover Borough (York County) – The Borough adjoins Conewago Township along its central eastern border. The Hanover Borough Comprehensive Plan was adopted in April of 1980 and was prepared by local officials with assistance from the York County Planning Commission. This Plan’s Future Land Use Map is described as generalized and not meant for specific land use boundary delineation. In any event, the Future Land Use Plan depicts a sequence of land uses of Low Density Residential to Heavy Industrial adjoining the Township. Specifically two Low Density Residential areas are shown in the Boroughs extreme northwest corner and adjoining the Village of Midway. This category reflects dwellings with up to 4 units but most or either single family detached or duplexes. Minimum lot sizes are typically between 4,000 and 8,000 square feet but can extend up to 15,000 square feet in the northern reaches of the Borough. Heavy industry is planned straddling Kindig Road and northeast of Bletner Road. This category is meant to acknowledge existing industries that include manufacturing and assembly plants.

Penn Township (York County) – Along the eastern edge of Conewago Township is Penn Township both north and south of Hanover Borough. The Penn Township Comprehensive Plan was adopted in August, 2001 and was prepared by local officials with assistance from Gannett Fleming, Inc. The Future Land Use Map depicts the northwestern tip to include a commercial area located on the west side of Carlisle Pike, while across Carlisle Pike is planned industry. To the South of Hanover Borough are a series of different land uses including industry adjoining Blettner Avenue, Highway commercial straddling Hanover Road and medium density residential elsewhere. This residential category is meant to accommodate densities of up to 5 dwelling units per acre with planned residential developments as an option. The extensive area planned for residential land uses is inconsistent with Conewago Township’s goals to protect valuable and productive farmlands in this vicinity.

B. ADAMS COUNTY COMPREHENSIVE PLAN

The *Adams County Comprehensive Plan (1990)*, portrays a vision of the entire County that assumes steady growth through the year 2010 along with a balanced mixture of land uses, protection of important natural and cultural features and efficient use of existing utilities. The Land Use Plan is an impressive composite of many factors and characteristics towards these valid community development objectives. The following presents Conewago Township’s land use plan of that document:

As the following map depicts, Conewago Township is planned to include a very wide range of land uses under the methodology adopted by the Adams County Planning Commission.

At arm's length, much of the Township is devoted to suburban residential expansion surrounding McSherrystown Borough. Specifically concentric zones of Medium Residential to Medium-to-Low Density Residential radiate outwards from Hanover and McSherrystown Borough as well as the Villages of Midway and Edgegrove. These planned residential areas are extensive and could produce large population increases. This pattern is somewhat expected given the Township's scattered development patterns and its far-reaching utility lines. The County Plan emphasizes the use of clustered housing designs with public utilities amid permanently preserved open spaces.

The Borough Commercial category is reflected linking Hanover and McSherrystown Boroughs' central business areas extending generally between third and Elm Streets within Midway. Another small Crossroad Commercial node is depicted at the intersection of Hanover Road and its intersections with Sunday and Hostetter. This designation appears premised in part upon corridor improvements to Sunday Drive and Hostetter Road. Another small Village Commercial node is also centered around the Village of Edgegrove. All commercial areas should seek to retain and re-develop existing businesses and promote new uses that reflect the County's historic and architectural values.

The County also recognizes the Township's considerable industrial land use component, particularly along the Adams and York County boundary to the north of Midway. Here a large area of the Employment Center category links the current uses found Kindig Drive and High Street. Two smaller nodes reflect the industrial parks located straddling Filbert and Ram Drives along the southern edge of the suburban neighborhoods located south of Midway.

Agricultural, Resource Conservation and Very Low Density Residential areas are mostly located in the south and southwest corner of the Township. A smaller wedge is also located southwest of the Village of Edgegrove. Last the northern edge of the Township is within this category despite its quarry use. These areas are treated as long-term staged growth reserves that if developed beforehand should be subject to strict clustering design with very low densities and large amounts of protected open spaces.

Finally, the County's Plan legitimately identifies Parks, Permanent Open Space and Preservation Areas that seem to follow natural feature systems and features. Interestingly, these most precious areas encircle the planned urban growth areas for residential commercial and industrial uses and offer a natural buffer for the outlying rural agricultural areas. Most of these areas reflect the County's extensive network of watercourses and their floodplains and wetlands; this same condition exists within Conewago Township. The County encourages the Township to strengthen its environmental protection standards along with promoting/requiring the use of cluster design to facilitate permanent protection of these sacred resources.

Given the County's planning goals align closely with those expressed by local officials for this Comprehensive Plan, the outcome Future Land Use Plan should present a scheme that is generally consistent with the Adams County Comprehensive Plan. Probably the largest difference would be the amount of and extent of land planned for residential growth versus that planned for continued agricultural production. This difference would likely be more a function of proper land use sequencing and timing than location and ultimate land use.

C. PENNSYLVANIA AGRICULTURAL SECURITY AREA

Act 43 of the Commonwealth of Pennsylvania was passed in 1981 to allow municipalities to establish **Agricultural Security Areas** (ASA) to promote more permanent and viable farming operations over the long run by strengthening the farming community's sense of security in land use and right to farm. Individual landowners petition the Township to create an ASA. Each parcel

must be at least 10 acres in size and the entire ASA must be at least 250 acres. By establishing an ASA, farmers who want to farm benefit as follows:

1. The Township Supervisors agree to support agriculture by not passing local ordinances which restrict normal farming operations or structures;
2. The condemnation of farmland by a government in the agricultural security area must first be approved by the State Agricultural Lands Condemnation Approval Board to determine if alternative sites are available for condemnation;
3. The farmland preservation options offered by the Adams County Agricultural Lands Preservation Board are available to qualified farm owners in an agricultural security area. For example, only a farm owner in an agricultural security area may be eligible to receive cash for permanently preserving the farm with a conservation easement; and,
4. Hazardous waste and low-level radioactive waste disposal areas cannot be sited.

Each landowner decides if they want to participate in the program. The farms that make up the 250-acre minimum do not have to be adjacent to one another and do not have to be in the same Township. The agricultural security area does not stop development nor restrict farmers in any way; only Township zoning laws regulate how much and where land can be developed.

Today Conewago Township farmers have joined the Township's ASA with 2636.9 acres among 25 parcels as shown on the *Adjacent Planning Map*. The average farm size enrolled within the ASA is 105 acres while the largest farm comprises just under 476 acres. These large ASAs in many cases create effective barriers that adjoin existing residential developments that could block suburban expansion. This could have a profound effect upon the location of short-term growth areas.

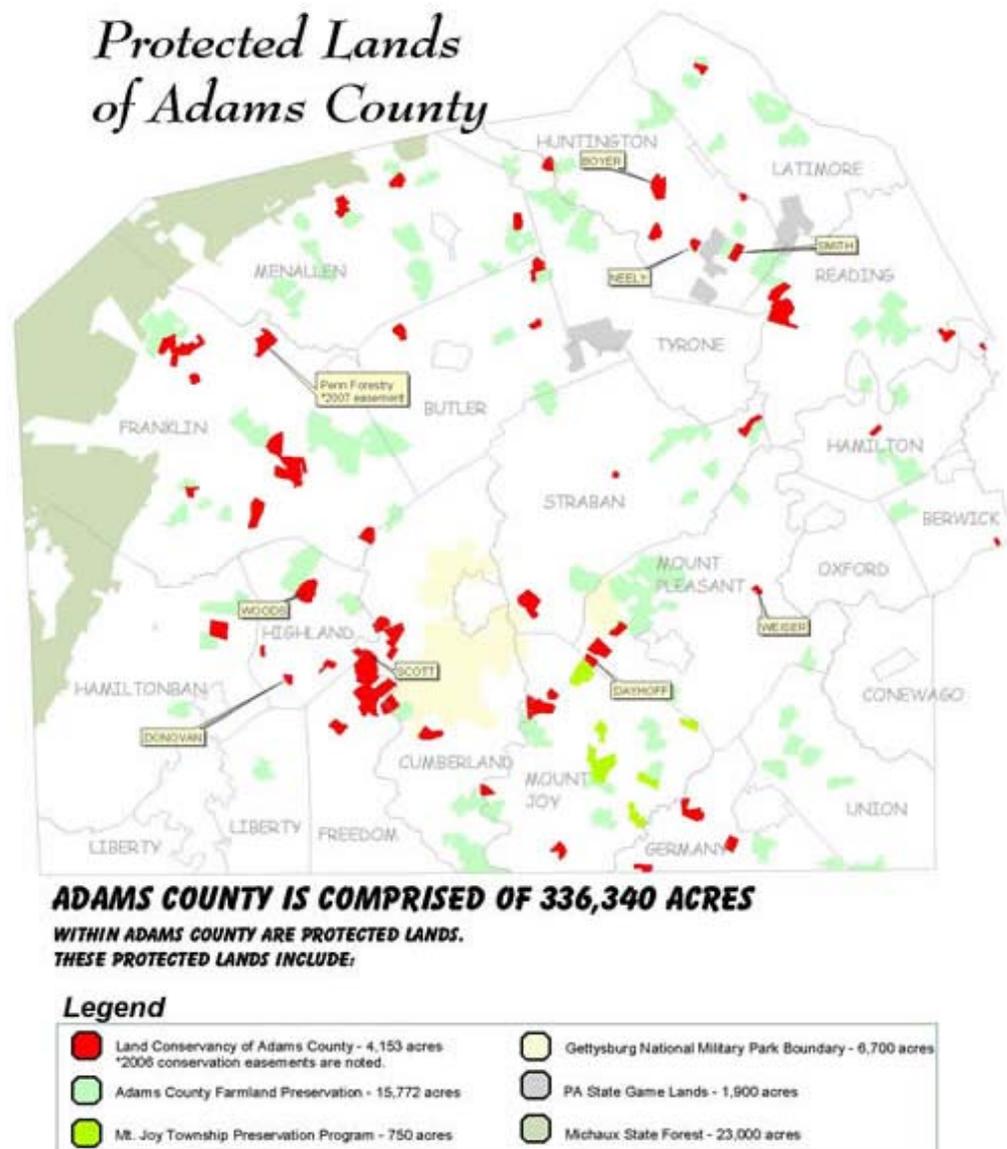
Presently, there are approximately of 98,000 acres recorded in Agricultural Security Areas throughout Adams County and this figure is expected to increase shortly.

D. PA AGRICULTURAL EASEMENT PURCHASE PROGRAM

"The Adams County Agricultural Land Preservation Board (Board) was established by the Adams County Board of Commissioners on January 10, 1990, pursuant to authority granted by Pennsylvania Act 43 of 1981 (7 Pa. Code Section 138.1) as amended, and by Act 149 of 1988 (3 PS Section 901 et. seq). The purpose of the Board is to administer the Agricultural Conservation Easement Program for Adams County.

1. Protect viable agricultural lands by acquiring agricultural conservation easements, which prevent the development or improvement of the land for any purpose other than agricultural production.
2. Encourage landowners to make a long-term commitment to agriculture by offering them financial incentives and security of land use.
3. Provide compensation to landowners in exchange for their relinquishment of the right to develop their private property.
4. Protect normal farming operations in agricultural security areas from incompatible Non-farm and uses that may render farming impracticable.

5. Protect farming operations from complaints of public nuisance against normal farming operations.
6. Assure conservation of viable agricultural lands in order to protect the agricultural economy of this Commonwealth.
7. Maximize agricultural easement purchase funds that protect the investment of taxpayers in agricultural conservation easements.
8. Concentrate resources in a manner that will ensure the purchase of easements for the protection of the largest amount of farmland possible.
9. Execute all agreements of other documents necessary to effect the purchase of such agricultural conservation easements in the name of Adams County and/or the Commonwealth of Pennsylvania.”¹



¹ <http://www.adamscounty.us/adams/cwp/view.asp?a=3&q=449592&adamsNav=|27138|>, Aug., 2007

To date, the Adams County program has preserved just under 16,000 of farmland on 116 farms, with the interest continuing to grow. The department received 76 applications covering over 6200 acres during their "Round 8" application cycle which closed in early 2007. Money for this program is allocated from both the county and the state, with some monies from the federal level. In the past six years, the Adams County program has been capable of preserving an average of 1092 acres of farmland each year. None of these farms are located within Conewago Township and none have even applied.

Local County staff opine that the lack of interest in the program in Conewago Township is related to the large corporate holdings of farmland that often require "board" actions rather than individual actions and because corporate officers want to keep all investment options available should unforeseen hardships arise within their corporations.

To implement the program the Preservation Board accepts applications from interested farm owners, ranks the applications according to a point system, and after the farms are appraised, buys as many easements as funding permits. The purchase price to be paid for an agricultural easement will be the difference between the appraised market value and the appraised farm value.

Factors the program considers in the review of potential farms for conservation easement purchase include the development pressures in the area; the suitability of the farmland tract for development because of soil capabilities, location, and configuration; any pre-existing restrictions against development; and other factors.

E. PRIVATE AGRICULTURAL EASEMENT PROGRAMS

In addition to the State-sponsored farmland preservation easement program within Adams County described above, the **Farm & Natural Lands Trust** (FNLT) is a private non-profit corporation that typically does not purchase easements. Rather the FNLT provides the opportunity for property owners to secure a charitable deduction for the difference in the fair market value of the land before granting of the easement, and its value after granting the easement. To date, the Trust has cooperated with the Adams County Agricultural Land Preservation Board through the acceptance of conservation easements throughout Adams County; however, none are located within Conewago Township.

The **Land Conservancy of Adams County** (LCAC), was formed in 1994 when a group of private citizens were backed by the Adams County Commissioners to organize an agency devoted to land conservation. In 1995 the LCAC was incorporated when 140 members (including the 3 County Commissioners) donated at least \$250; the County also budgeted \$9000 to support the organization. Today the LCAC has over 600 members, has 4 officers, 7 board members and 2 paid staff. The LCAC currently holds 81 easements on more than 4,800 acres within Adams County. None of these easements are located within Conewago Township.²

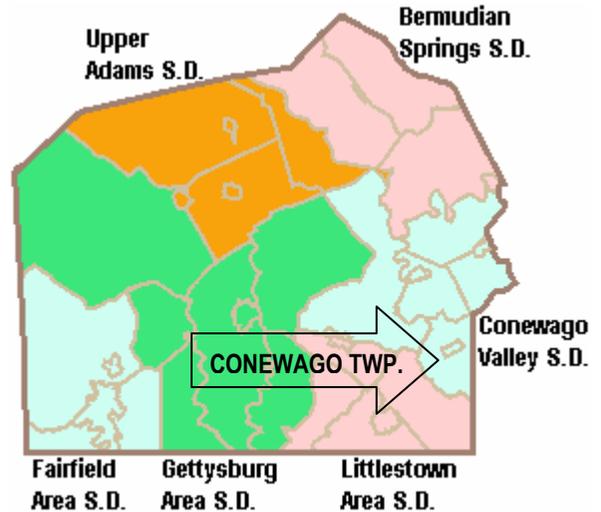
² <http://www.lcacnet.org/LCACAboutUs.htm>

VII. Public Facilities

A. Schools

A high quality education is a widely-held objective for most of our society. Historically, school districts have forecast short-term future demands for school facilities, enabling them to program additional building expansion, construction, consolidations, and closures to meet forecasted demands. School district planning can have a direct effect on, as well as be affected by, the land use activities within an area. For instance, new or expanded schools may generate increased nearby residential development, and school closures may contribute to the de-population of communities. At the same time, long-range municipal land use planning may designate new growth areas at some distance from existing or planned school facilities. All of these issues underlie the importance of coordinating school district and municipal comprehensive planning processes to assure that existing and future schools and planned community growth occur hand-in-hand.

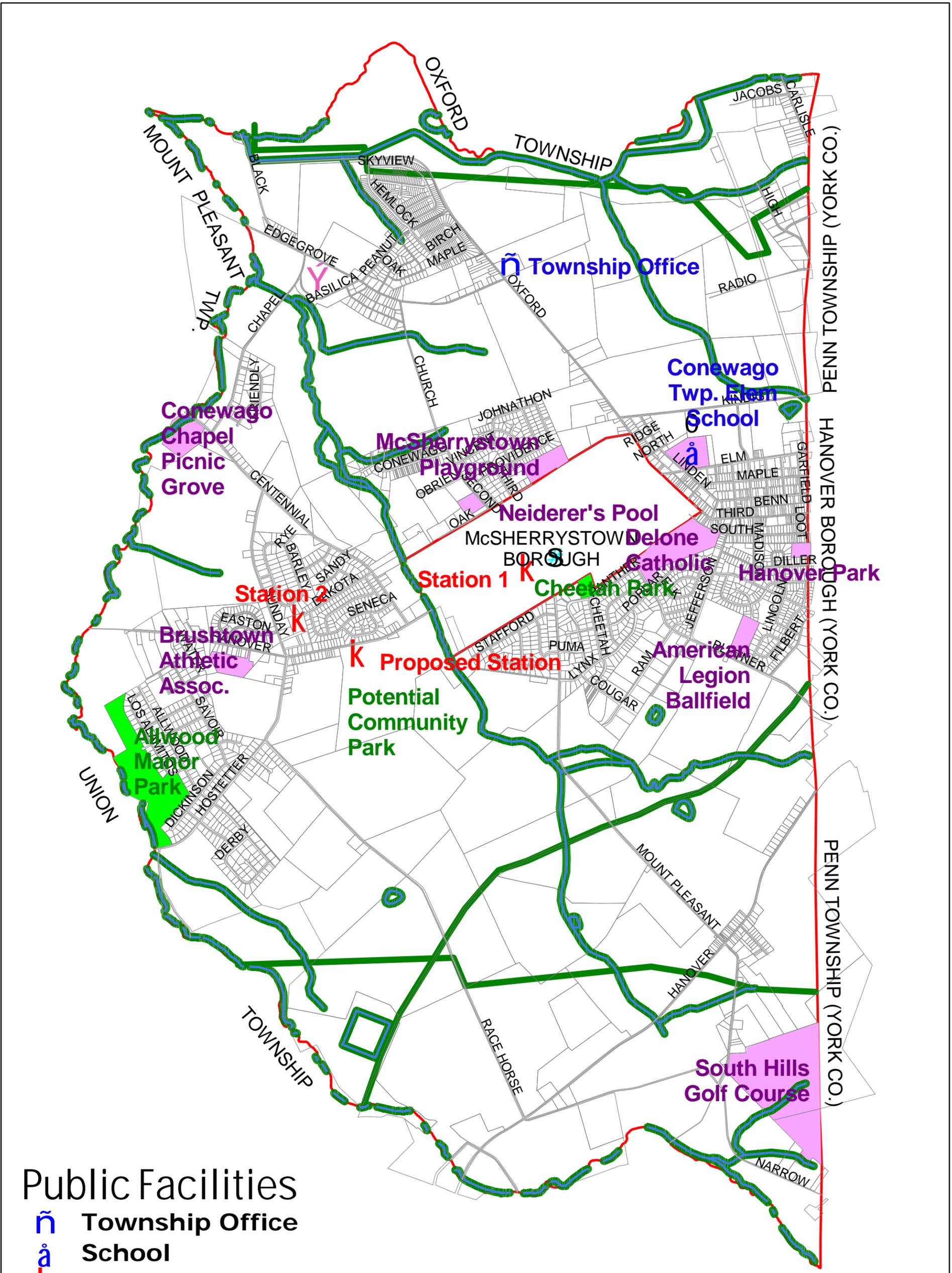
Conewago Township is served by the Conewago Valley School District. The Conewago Valley serves all Conewago, Oxford, Berwick, and Hamilton Townships, portions of Mount Pleasant, Straban and Tyrone Townships, all of McSherrystown, New Oxford, and Abbottstown Boroughs and a portion of Bonneauville Borough. The District is governed by a nine-member School Board. Each Board member serves a 4-year term. The following is the District's contact information:



Conewago Valley School District
 130 Berlin Road
 New Oxford, PA 17350
 Telephone (717) 624-2157
 Fax (717) 624-5020
 Website - <http://www.conewago.k12.pa.us/>

Presently, the School District employs the following grade format:

Public School Grade Format	
Elementary School	K-3
Intermediate	4-6
Middle School	7-8
High School	9-12



Public Facilities

-  Township Office
-  School
-  Fire Station
-  Post Office
-  Conewago Chapel
-  Township Park
-  Other Park
-  Potential Linear Park



Conewago Township

Adams County, PA



The following tabulates conditions at each of the School District's five school sites:

Summary of Northern Adams County School District Facilities						
School Name	Year Built	Renovation Dates	Rated Condition	Grades Housed	Rated Capacity	2007-08 Enrollment
Conewago Twp. Elementary	1958	2004	Good	K-3	600	550
New Oxford Elementary	1954	2004	Good	K-3	NA	586
Conewago Valley Intermediate	2005	NA	New	4-6	NA	877
New Oxford Middle School	1976	1995/2004	Good	7-8	NA	618
New Oxford High School	1960	1995/2004	Good	9-12	NA	1,251

Source: School District

Although the Conewago Township Elementary School is the only of the District's elementary schools located within Conewago Township, some elementary-aged students within the Township are bused to the McSherrystown Elementary School as



Conewago Township Elementary School

well. All of the District's elementary schools are rated as in "good" condition by District Officials. However, District Officials indicate that limited growth can be absorbed and that renovations may be necessary to accommodate growth over the next 7 to 10 years.

The Conewago Valley Intermediate School is located at 175 700 Road in the Borough of New Oxford. This school is the newest within the District and serves grades 4 through 6 District-wide.



Conewago Valley Intermediate School

The New Oxford Middle and the New Oxford High Schools are both located at 130 Berlin Road in the Borough of New Oxford. Both of these schools are described in "good" condition by District Officials. However, a new middle school may be needed if community growth continues.

In addition to the "typical" primary and secondary educational offerings, the District offers vocational programs to about 40 high school students at off-campus locations each year.



New Oxford Middle School & New Oxford High School

The District produces a long range plan every five years with the next update to be undertaken in 2008. The population projections provided in Chapter 4 suggest that Conewago Township will add about 115 new residents each year through year 2020. Assuming the same age profile recorded Township-wide in the last Federal Census, the following presents the number of new students could be expected at each school level:

Projected School-Aged Students from Conewago Township		
School Level (Grades)	New Students per Year	New Students 2007-2020
Elementary School (K-3)	7	85
Intermediate School (4-6)	6	78
Middle School (7-8)	4	52
High School (9-12)	7	85

Because, the initiation of school expansion is a major project that often takes years to undertake, ***it is recommended that the School District closely monitor growth within the District so as to proactively plan for facility expansion well in advance of actual demand for space. The School District could benefit from an improved process of residential development review. By learning of proposed developments early, the District can better prepare for needed school expansion and bus routing. Conewago Township should revise its subdivision and land development application requirements so that adequate and timely notification to the School District is assured. Similarly, the School District should allocate manpower and resources so as to properly respond to such applications and provide meaningful feedback to the municipalities.***

Finally, the District offers access to its recreation facilities to many organizations and community groups, particularly those involved in outdoor athletics. (School District parks and other recreation facilities are inventoried within the next Section) District officials believe that the offering of more opportunities for adults and non-team sports (e.g. skate parks) would improve recreation service within the Township and throughout the District. ***Township Officials should fully understand residents' dependence on School District facilities and look for opportunities to cooperate with the District in the delivery of this service and maintenance of its facilities.*** More on this subject follows in the next Section of this Chapter.

B. Parks and Recreation

The planning for both passive and active recreation opportunities is an important component of any comprehensive planning effort. Recreation planning seeks to determine the level of demand for recreation facilities and programs, and suitable locations for parks. Finally, certain widely-used procedures for the acquisition of parklands via dedication/fee-in-lieu thereof subdivision requirements are only legally defensible if they seek to implement legitimate and logical recreation goals and objectives.

One of the planning goals of this Plan that specifically relates to recreation states:

Provide one large, centrally located, neighborhood park to address the recreational needs of township residents.

In February, 2007, the Township adopted the Conewago Township Parkland Assessment report. The content of this report is hereby expressly incorporated within this Comprehensive Plan and will serve as the Township's Official policy with regard to parks and recreation. The following summarizes some of the key findings and recommendations that relate to other components of this Comprehensive Plan.

While the Township owns and maintains some 15 parcels that were acquired through the subdivision and land development process, 10 are primarily used for stormwater detention purposes and offer no practical use as parklands. Two others are too small for parks and the Township municipal campus would require expansion for park use. Only three parcels present opportunity for park use.

The first parcel (depicted on the Public Facilities Map as the Chapel Ridge Park) contains 29± acres and is located at the southeast corner of Oxford Avenue and Black Lane. It links to the Chapel Ridge subdivision located in the northwest corner of the Township via a 50-foot wide strip of land. Portions of this site are subject to natural limitations relating to floodplains, wetlands, sinkholes and a drainage channel; however, the southern expanse could be used for walking trails, athletic fields and nature study. Should the site be developed for park purposes, a trail should be fitted extending to the Chapel Ridge subdivision. However, recently the Township has sold this parcel for development with the proceeds generated used to purchase land more centrally located within the Township.

The second parcel (depicted as the Allwood Manor Park on the Public Facilities Map) is the largest owned by the Township with 46± acres and is located between the South Branch of the Conewago Creek on the west and the Allwood Manor neighborhood to the east. This property is characterized with extensive floodplains, wetlands, woodlands and drainage basins. However, the position of these features offer potential for greenways and access along the Creek, as well as medium to large athletic and/or practice fields. Development of this park is considered to be a low priority following acquisition and development of a centralized community park and improvement to Cheetah Park.

The third parcel is Cheetah Park containing 5.35 acres which is located at Cheetah and Panther Drive. The Parkland Assessment presents a Master Plan for development of the Cheetah Park as depicted below and a capital improvement program to improve Cheetah Park and prepare Master Plans for Allwood Manor and Chapel Ridge Parks totaling \$445,900 plus land costs.



Based upon the National Recreation and Park Association minimum parkland standard of 10 acres of public parkland per 1000 residents, the Township has a current deficiency of approximately 52 acres; this deficiency will grow to approximately 80 acres by the year 2020.

In response the Parkland Assessment report recommends that the Township acquire 80 acres of parkland by the year 2020 through purchase, donations and/or gifts. One large minimum 63-acre park should be acquired at a central location to act as a communitywide Township park.

One option under consideration is the sale of the Chapel Ridge Park property to help fund the acquisition of an 80-acre park. Preliminary investigation has identified the property located on the south side of Hanover Road across from its intersection with Centennial Road as a potential location for this park. This site affords a central location with direct connection to adjoining neighborhoods within the Township and McSherrytown Borough. This site also is the location of a new proposed regional fire station (preliminary subdivision plans just submitted). Township officials hope to acquire this site using monies derived through the sale of the Chapel Ridge Park plus the balance in their current park fund.

Mandatory Dedication (or fee-in-lieu thereof) of Recreation Land – One of the most important sources of local revenues is mandatory dedication. Since it was enabled by the Pennsylvania Municipalities Planning Code in the late 1980s mandatory dedication of parkland has become a standard technique for local park systems to keep pace with growth. The Township currently relies upon this technique. However, given the previously-described need to acquire and develop community parks, the Township should adjust its standards under this requirement.

Changing demographics, land values and parkland needs compel municipalities to periodically calculate mandatory dedication standards and their related fees-in-lieu-thereof. The following will provide a basis for such calculations at this time.

The Township uses the NRPA's recommended minimum standards for community parkland of 10 acres per 1000 population. To derive a per unit or per lot standard, the 1,000 population is divided by the average household size (year 2000) reported as follows:

***1000 population divided by 2.68 persons per unit equals 374 dwelling units
divided by 10 acres equals 1165 square feet per dwelling unit.***

If raw land is all that was needed to provide for local parks, then the preceding required park acres per dwelling unit would enable the Township to collect parkland that would keep pace with its projected growth. A community park is more than raw land; it requires a high level of infrastructure and improvement. Generally, the value of these improvements costs about as much as the value of the parkland itself. Therefore, it is recommended that the Township double the preceding acreage figure to derive needed mandatory dedication standards to effectively meet expected demand for a developed community park. Therefore, each unit should be required to dedicate 2330 square feet (0.053 ac.) of land for park purposes.

As an alternative to parkland dedication, municipalities can accept a fee-in-lieu of parkland dedication. This approach can only be used in those instances where the developer and municipality agree on the amount of the fee-in-lieu. In addition, such funds cannot be used merely to maintain existing facilities, but must be used to:

1. purchase new parkland;
2. purchase new equipment for new or existing parks; and/or,
3. make improvements to existing parks that will serve existing residents and those of the proposed development.

According to requirements within the Municipalities Planning Code, amounts of the fees-in-lieu should be derived from the following approach:

An appraiser should be retained by the municipality to analyze recent real estate transactions and derive estimates of fair market value. Such estimates can be based upon all properties within the municipality, or on a neighborhood basis. It is important that the appraiser be informed of the development features (e.g.,

utilities, zoning, curbs, sidewalks, etc.) common to such lands, so that accurate real estate comparisons can be identified. Once these estimates are derived, they should be periodically updated to reflect the ever-changing value of land.

When disputes between the developer and municipality occur, both the developer and municipality should select an appraiser who, in turn, should jointly select a third appraiser. This third appraiser should then determine the fair market value of the land.

Funds collected under this approach must be used to provide for recreation facilities that are accessible to residents of the proposed development. In determining accessibility to the park, local officials should be guided by the respective park service areas as listed in this Plan. In this instance the Township intends that its community park serves the entire Township; therefore, so long as the funds are spent for suitable purposes (e.g. land acquisition, equipment and improvements) they would comply with the State law.

To estimate the value of fees-in-lieu of parkland dedication an average value of \$80,000 per acre will be used (based upon information from a local real estate appraiser) to account for the value of improved residentially-zoned land within the Township. The following lists estimated values for fees-in-lieu of parkland dedication per dwelling unit.

Suggested Mandatory Parkland Dedication/Fees-In-Lieu Standards	
Required Park Acres per Dwelling Unit	Fee-In-Lieu of Parkland
.053 acres (2330 sq. ft.)	\$4240 per unit

By applying these above figures to the Township’s projected growth as described in Chapter IV, the following dedicated acres and/or fees-in-lieu can be collected to meet increasing park demand generated by growth:

Projected Dedicated Parklands or Fees-In-Lieu-Thereof 2000 to 2010			
Time Period	Projected New Dwellings	Projected Dedicated Parklands	Projected Fees-In-Lieu of Parkland Dedication
2007-2010	166	8.8 acres	\$704,000
2007-2020	688	38 acres	\$3,040,000

As can be seen, the value of mandatory dedication/fee-in-lieu-thereof standards is almost over \$3,000,000 across the Township through the year 2020, which unless implemented will have to be generated through other means. For this reason, it is vital that the Township amend its mandatory dedication standards within its Subdivision and Land Development Ordinance.

The following inventories all Township and School District parklands available within the Township:

FACILITIES INVENTORY

BACKGROUND	SITE NAME	Cheetah Park	Allwood Manor Park
	OWNERSHIP & MAINTENANCE	Township	Township
	SITE TYPE	Neighborhood	Community
	SITE CONDITION	Undeveloped	Undeveloped
	TOTAL ACREAGE (DEVELOPED)	5.35	46 ac.
PLAYGROUNDS	Swing Sets		
	Sliding Boards		
	Climbing Equipment		
	Merry Go-Rounds		
	Seesaws		
	Rocking Toys		
	Big Toys	2	
FIELDS & COURTS	Baseball/Softball Fields	1 proposed	potential
	Soccer/Hockey Fields		potential
	Football Fields		potential
	Basketball Courts (hoops)		
	Tennis Courts	1	
	Volleyball Courts	3 proposed sand	
	Bleachers	1 proposed	
	Horseshoe pits	4 proposed	
	Multi-purpose fields	1 proposed	potential
INDOOR	Gymnasium		
	Swimming Pool		
	Weight Room		
	Wrestling Room		
	Multi-purpose room		
	Music Room		
	Library		
	Auditorium (Seats)		
	Computer Lab		
	Industrial Arts Shop		
SUPPORT	Parking Spaces	32 proposed	
	Rest Rooms	proposed	
	Water Fountains		
	Picnic Pavilion	2 proposed	
	Snack Bar	proposed	
	Waste Receptacles	proposed	
	Bike Rack		
	Trails	proposed	potential
	Signs	proposed	

FACILITIES INVENTORY

BACKGROUND	SITE NAME	Conewago Township Elementary School	Conewago Valley Intermediate School	New Oxford Middle & High Schools
	OWNERSHIP & MAINTENANCE	School District	School District	School District
	SITE TYPE	Neighborhood	Neighborhood	Community
	SITE CONDITION	Good	Good	Good
	TOTAL ACREAGE (DEVELOPED)	11.5	NA	NA
PLAYGROUNDS	Swing Sets	2		
	Sliding Boards	2		
	Climbing Equipment	1		
	Merry Go-Rounds	1		
	Seesaws			
	Hopscotch	1		
	Four Square	1		
FIELDS & COURTS	Baseball/Softball Fields	1		6
	Soccer/Hockey Fields		1	3
	Football Fields			2
	Basketball Courts (hoops)		2	3
	Tennis Courts			
	Volleyball Courts			
	Bleachers			
	Horseshoe pits			
	Multi-purpose fields			
INDOOR	Gymnasium	1	1	5
	Basketball Courts		1	2
	Weight Room			1
	Wrestling Room			2
	Multi-purpose room			2
	Music Room			4
	Library	1	1	2
	Auditorium (Seats)			1 (1300 seats)
	Computer Lab			6
	Industrial Arts Shop			8
SUPPORT	Parking Spaces	X	x	X
	Rest Rooms	X	X	X
	Water Fountains	X	X	X
	Picnic Pavilion			
	Snack Bar			X
	Waste Receptacles	X	X	X
	Bike Rack	X	X	X
	Trails			¼ mile
	Signs	x	X	X

Linear parks and greenways are also gaining in popularity throughout the nation as less and less open space remains within developing areas. These parks can take many forms from abandoned railroad beds to utility transmission lines and riparian buffers along creeks. Conewago Township has conditions that would seem to promote the opportunity for linear parks.

First the Township has considerable open space which, by design, tends to keep the potential for linear parks intact as compared with a landscape that is undergoing conversion for development.



Photo of creek with and without a riparian buffer through farmland.
Source: York County Planning Commission.

Next, the Township has considerable stream frontage extending the full length of the Township's western boundary along the South Branch of Conewago Creek and along Plum Creek. Both of these streams possess fairly wide

floodplains with adjoining wetlands that are unsuitable for development. These natural corridors represent the best opportunities for greenways that can significantly improve surface water quality and can offer tremendous environmental, recreational and educational value.. At the same location these buffers also offer "habitat highways" where local wildlife can find refuge and food amid agricultural and development settings.

For these reasons, all of the linear park opportunities have been plotted on the Public Facilities Map. But, the plotting of a potential greenway on a map is only a beginning point to a lengthy and potentially difficult process that ends in development and use. Many pitfalls can "derail" this process and prevent project completion. Nonetheless, these greenways have become one of society's popular priorities and therefore local officials should mount a coordinated multi-prong approach to protecting these areas.

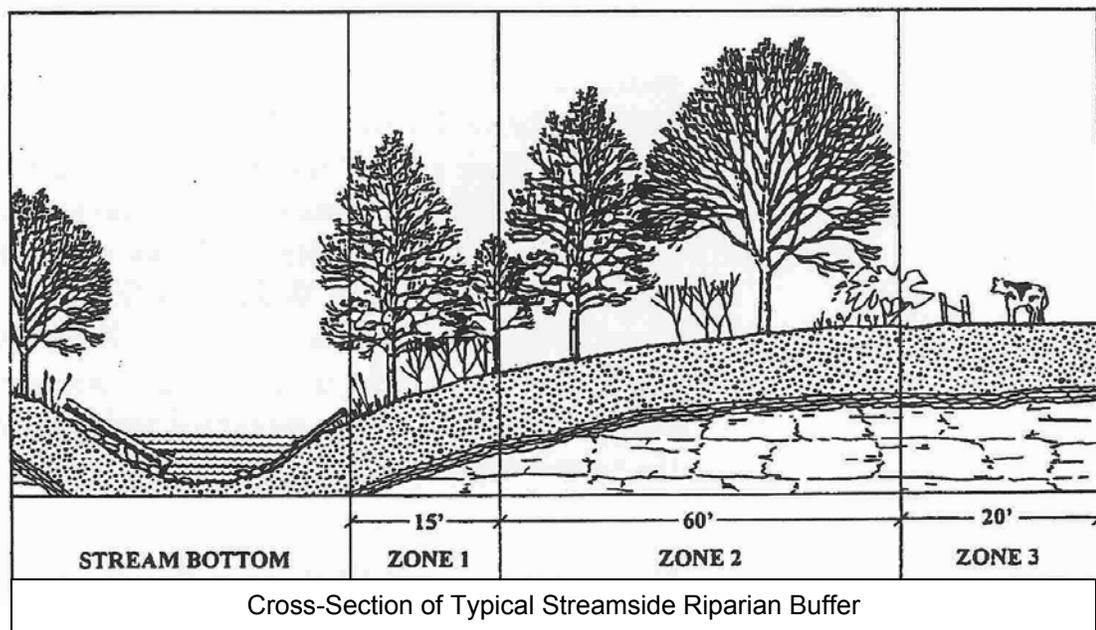
Studies conducted by the U.S. Forest Service suggest that riparian buffers extend to include a 95-foot wide radius from the streambanks. This width is determined by the USDA Department of Forestry, based upon the climatic conditions. Essentially, riparian buffers comprise three distinct zones, as depicted below. The following will describe where to establish, and how to plant and maintain each of these three zones:

Zone 1 is the landward area located between the streambank edge under typical flow conditions, and the largest width of any of the following:

- fifteen (15) feet, as measured directly perpendicular from the streambank edge;
- the 100-year floodplain;

- any adjoining identified wetlands; and/or,
- any adjoining area characterized by slopes exceeding twenty-five percent (25%).

This Zone must include mature canopy trees and a ground cover of warm season grasses. New tree plantings should be selected, arranged and managed to accelerate canopy growth, and offer native species habitat and food supply. New grass plantings should be selected and managed to filter-out pollutants and offer habitat. All vegetation within this Zone must thrive in wet conditions. Zone 1 requires little maintenance. As trees mature, die and decay, it is important that such natural debris be allowed to decompose within the stream. This will provide important food and habitat for beneficial microorganisms, fish and amphibians. Streamside grasses should similarly be allowed to seasonally flourish and recede. Manmade activities should be very limited and confined to perpendicular passages from Zone 2. Intensively-used locations should be fitted with raised walkways and reinforced embankments. Streamside cleanup of junk and manmade debris is permitted. No animal watering and crossing locations are permitted, unless they are reinforced.



Zone 2 begins at the inland edge of the above-described Zone 1 and extends at least sixty (60) feet inland therefrom. This Zone must also include mature canopy trees generally three rows deep, and a natural undercover. New tree plantings should be selected that grow rapidly, so as to intercept passing nutrients. Such trees should also be arranged and managed to accelerate canopy growth, and offer native species habitat and food supply. Successive undercover plants should also be allowed to “evolve” with the canopy of this Zone. This Zone requires the most attention, but not for some time after initial planting. Here, the objective is to develop a stable and broad canopy of tree cover. The trees within Zone 2 are fast-growing and, therefore, consume many nutrients. The regular pruning and trimming of these trees will increase their nutrient consumption, but should not jeopardize the important overhead canopy of shade. The natural undercover should be undisturbed, except for periodic litter cleanup. Pedestrian paths can weave through Zone 2, but should be provided to prevent compacted soils and root damage.

Zone 3 begins at the inland edge of the above-described Zone 2, and extends at least fifteen (15) feet inland therefrom. Where a pasture is proposed just beyond the above-described Zone 2, no Zone 3 is required. This Zone should be planted with warm season grasses that are allowed to mature naturally without mowing. The tall grasses ensure that overland storm water flows do not “channel” into Zone 2. New grass plantings should be selected and managed to enable controlled grazing or haying, so long as the grasses are not reduced to a point where they are no longer able to effectively disperse the surface water flows. This Zone also requires little maintenance. Long summer grasses should be allowed to flourish and recede with the seasons. Grazing and haying is permitted, so long as the residual grass length is sufficient to disperse overland storm water flows into Zone 2 and avoid channelization.

Buffer Use and Maintenance - Streamside buffers must be generally undisturbed. Mature trees and long grasses absorb more nutrients than do manicured plants. Similarly, the more extensive root systems retain passing sediments. These characteristics reduce pollution and yield abundant food and habitat for wildlife. The temptation to “over-maintain” the streamside must be overcome.



Local officials should educate landowners and developers of the importance of riparian buffers, and the Township’s intent to provide for them. Newsletter articles should be used occasionally to introduce these concepts, and then to feature successful implementation examples as they occur. A sample riparian buffer ordinance is contained in Chapter X (Future Land Use) of this Plan and should be adopted.

But zoning regulations alone will not get this job done, as most land uses don’t require zoning approval to continue to operate. In these areas, other options exist. First, the USDA Natural Resources and Conservation Service offers its Conservation Reserve Enhancement Program (CREP). This program is limited within Adams County to applications for riparian buffers through the end of 2007. **Essentially landowners adjoining streams are offered annual rental payments for installation and proper management of streamside buffers. Contracts are offered for 10-15 years. In addition to the rental payments, landowners are eligible for 100% cost share reimbursement for installation of suitable vegetation within these buffers.**

“The average cost of the conservation reserve program nationwide is about \$43 per acre per year. However the actual amount farmers will be paid to participate in CREP is highly variable, since it is largely related to local land rental rates. [Within Adams County these payments have averaged between \$115 and \$130 per acre per year; however, they are likely to increase shortly]. The methodology for determining the total amount to be paid to farmers considers the following: base rental rate, cost of installation of conservation practices, annual maintenance costs and any special incentives. The base rental rate is the average dry land cash rental rate based on the three predominant soil types of the land. The Department of Agriculture maintains this information on a county by county basis for the entire country. The Federal government will pay for up to 50 percent of the cost of installing the conservation practices on the land (e.g. planting trees and grass). The Federal government will also pay a nominal annual maintenance fee (generally \$5 per acre). Finally, the Federal government may make special one-time or annual incentive payments to encourage participation in the program. For example, the Federal government pays a 20 percent annual bonus above the rental payment for certain high priority practices such as installation of

filter strips and riparian buffers. States and other program participants may provide other funding to further encourage participation in the program.¹

Township officials should mount a campaign to inform local landowners who abut these creeks. Program experts should be invited to explain the benefits of these programs. Information about this program is available from Farm Services Agency (717) 334-4216.

Many of the success stories surrounding riparian buffers within Central Pennsylvania have been the results of dedicated volunteers from conservation and sporting groups. Another powerful ally are the Region's youth. Environmental studies classes can develop pilot riparian buffers at visible school and park locations; these focused successes enable the benefits of these buffers to be experienced first-hand by the general public. ***The Township should encourage the School District to develop and regularly offer a streamside riparian buffer workshop as part of its curriculum, for students to learn "first-hand" about how man can co-exist with nature. Local and School District officials should cooperate on a number of these pilot projects at visible locations (i.e. Allwood Manor Park). Then, as successes mount, they should be featured in local newsletter and media articles that widen awareness and attention about their use and benefits.*** Such projects represent excellent candidates for Growing Greener grants from the State. Once momentum is achieved, other civic groups are likely to get involved.

The Township should also require the installation of riparian buffers for uses that have a potential for generation of surface water pollution as part of its zoning approval process. Intensive livestock operations and waste-related facilities are obvious choices but farm and rural occupations could also benefit from such protection.

C. Police Protection

Police protection is an obvious public service benefiting residents and businesses. The traditional role of the police involves three functions: law enforcement, order maintenance, and community service. Law enforcement involves the application of legal sanctions, usually arrest, to persons who injure or deprive others of life or property. Order maintenance involves the handling of disputes, or of behavior that threatens to produce disputes. The third aspect of the police function, and the one most likely to occupy the major portion of an officer's time, varies from community to community according to tradition and local ordinances. These activities include such tasks as traffic control, rescue operations, animal control, and ambulance and first-aid services.



Police protection is currently provided by the Conewago Township Police Department. In addition, all emergency police

¹ <http://www.fsa.usda.gov/dafp/cepd/crepqnas.htm>

calls are dispatched through the Adams County “911” program. The following information was obtained from Chief David Williams via survey and follow-up telephone contact.

The Conewago Township Police Department serves all of Conewago Township exclusively. Presently the Department is housed at the Township Office located at 541 Oxford Avenue, Hanover, PA. The Department consists of 5 full-time officers, and 1 full-time detective who occasionally patrols the Township. The Department recently increased its regular manpower coverage with the addition of another officer. The following tabulates patrol manpower coverage by day and hours:

Conewago Township Patrol (Officers On-Duty)							
Hours	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
7AM – 3PM	1	1	1	1	2	1	1
3PM – 7PM	1	1	1	1	2	2	1
7PM – 11PM	1	1	1	1	2	2	1
11PM – 7AM	1	1	1	1	2	2	1

The Chief describes the current station house as cramped needing both additional office and garage space. Presently the facility contains patrol, interview, evidence, investigation, and receptionist areas, the Chief’s office, a locker room and 3 garage bays. The Department has fully-equipped patrol cars including one un-marked vehicle, an Enradd speed timing device, 1 radio base station, 11 portable radios, 4 mobile radios with repeaters, 3 first-aid kits with AED units, 7 computers with a server and 3 chemical suits.

Recent Police Activity Within Conewago Township			
Year	No. of Total Responses	Traffic Accident Responses	Serious Offenses
2004	2386	166	85
2005	2561	127	67
2006	3120	133	80

Finally, Chief Williams indicates that coordination of emergency service providers operating within the Township works “extremely well.” The Department began a neighborhood watch program in July, 2007 to encourage residential reporting of suspicious activity. The Chief believes that additional funding of the Department for equipment and training would improve local police protection.



D. Fire Protection and EMS

Fire protection and rescue and emergency medical service (EMS) are basic public safety service that are important to the Township. Obviously, fire protection and rescue are intended to minimize the loss of life and property due to fire and related hazards. The level

of fire protection a community offers also affects the rate which area residents and business owners must pay for fire insurance.

Emergency medical service involves the treatment and pick-up of patients at the scene of an accident or other medical emergency, and their transport to local medical care facilities for treatment. EMS can also involve routine transport, which is the transport of patients from one medical facility to another, or to their home. The following presents information obtained from Andrew Weaver, Fire Chief for the Southeastern Adams Volunteer Emergency Services (SAVES).

Recently the Township's former four first-call companies were merged into the Southeastern Adams Volunteer Emergency Services (SAVES). SAVES provides for first-due coverage throughout Conewago Township and McSherrystown Borough and portions of Union and Mount Pleasant Townships. Fire and rescue functions are completely voluntary while EMS are fully paid operations.

The agency currently operates out of two facilities; however, that will change soon. Presently, Station 1 is located at 238 Main Street in McSherrystown and Station 2 is located at 33 Sunday Drive within Conewago Township. Recently, SAVES submitted a preliminary plan to subdivide 15 acres located on the south side of Hanover Road just west of its intersection Centennial Drive for its new centralized regional facility. All locations are plotted on the Public Facilities Map.

SAVES has 1 fire engine, 2 fire engine tankers, a 75-foot aerial/quint, heavy rescue, brush and service vehicles and 2 Basic Life Support ambulances all of which are described as well maintained and more than adequate to handle foreseeable emergency situations. The agency has mutual aid agreements with adjoining area departments for both fire and EMS operations and strong professional relationships with local police departments.



The volunteer response times for fire and rescue vary from the time of day and the day of the week. The average response time for Conewago Township in 2006 was 5 minutes, 30 seconds. This time reflects the time of dispatch to the first unit arriving on the scene. EMS units are staffed from 07:00 AM to 11:00 PM, 7 days a week. With personnel on station we can be on the scene of an emergency between 3 and 4 minutes. An overnight paid on call crew answer all calls from their homes. Response times are between 5 and 6 minutes. SAVES anticipates being a 24/7 paid service, with providers on station one they move into the new station which will benefit the area residents.

SAVES currently is a very strong organization with about 150 active volunteers that serve in one capacity or another. 55 are active emergency responders, 15 are fire police, 20 are paid EMS providers (3 full time, 17 part time) and 60 are support members that serve mostly in non-emergency functions.

According to Chief Weaver, the trend for volunteers across the state and the nation does not have a strong outlook.

FUTURE VOLUNTEER MANPOWER

Across the nation, fire and EMS companies are experiencing declining numbers of volunteers. This is particularly true of “younger volunteers” who will become the next generation of emergency service providers. However, given the projected growth within the Township, future demands will rise and more manpower will be needed. Nationally, volunteerism in general, is declining. The National Volunteer Fire Council reported that the number of volunteer firefighters dropped 12% since its record high in 1983. And, despite President Bush's call to public service after "9/11", the downward trend continues. This often forces mutual-aid responses from distant companies; this strategy may work in the short term, but will eventually overburden volunteers who will get frustrated and quit. The more you demand of a volunteer, the less you are likely to receive! Declining manpower response is most problematic during the day when many volunteers work outside of their first-due response area.

Presently, SAVES has 55 full-time active volunteers, and 15 volunteer fire police and 20 paid EMS personnel. A 1999 study conducted by the Pennsylvania Fire and Emergency Services Institute showed that most fire companies have between 11 and 20 active members. Consequently, SAVES manpower levels suggests that local volunteerism is strong. Nonetheless, Chief Weaver has observed a decline in new membership and know that difficult times lie ahead. Furthermore, in light of the terrorist attacks committed against the United States on September 11, 2001, many experts argue that the capacity to respond to local emergency crises needs to be expanded. Fortunately, many citizens within our society have begun to acknowledge the important and life-saving roles volunteer firefighters, EMTs and local police officers provide.

While volunteerism is strong today, the following is a list of possible strategies that could be used to enlist more volunteer firefighters, particularly during the daytime:

- 1. Recruit firefighters/EMTs who live within the region and work for businesses located here;***

2. ***Recruit firefighters/EMTs who live outside of the region, but work for businesses located here;***
3. ***Establish policies with local governments and businesses that enable their employees to respond to daytime emergencies;***
4. ***Identify local volunteer firefighters/EMTs who may work for Adams County, and establish policies for their release from work duties to respond to daytime emergencies within the Township;***
5. ***Design ongoing recruitment strategies for new resident volunteers and retention strategies for existing volunteers; and,***
6. ***Explore the offering of a “junior” firefighting curriculum within the School District as a means of developing interest and expertise among potential future volunteers.***

Prior to actual recruiting, the following evaluation process should be completed:

1. ***Determine the need for more volunteers from any of the preceding sources;***
2. ***Establish policies that allow for nonresidents to become members of their respective companies;***
3. ***Identify those local and nonresident volunteers who work for companies within the region who could potentially respond to daytime emergency calls;***
4. ***Determine the level of competence of potential volunteers and/or training needed to “run” with local companies;***
5. ***Establish ongoing working agreements with local businesses for the release of volunteer firefighters/EMTs during daytime emergencies;***
6. ***Require the potential “daytime” employee volunteer firefighters to become an official member of SAVES, so that they can be covered by the municipality’s workmen’s compensation insurance policy; and,***
7. ***Establish an ongoing mechanism that periodically reinitializes the recruitment process.***

FUTURE FUND-RAISING

The financial support that SAVES receives from the municipalities that we serve varies. All municipalities reimburse SAVES for workman compensation insurance. Both Conewago Township and McSherrystown Borough pay fire hydrant rentals. As for general fund donations, SAVES received less than \$25,000.00 from the four municipalities that it we served in 2006.

Like a lack of manpower, local volunteer fire and ambulance companies are plagued by rising costs associated with the need to purchase equipment and supplies. A 2001 study conducted by the Pennsylvania Fire and Emergency Services Institute provided information about the costs saved by the Commonwealth's volunteer fire companies. Essentially, they assumed that, in the absence of volunteer fire companies, paid companies would require:

“Typical Costs Associated with Fire Protection ”
<ul style="list-style-type: none"> • One fire company serves each 10,000 population; • Each company requires 20 full-time paid firefighters; • Each firefighter would be paid \$55,000, including benefits; • Each company would have an average annual operating budget of \$50,000; • The cost of protective clothing/gear for each firefighter would total \$5,688; • Each company would average 4 emergency vehicles at a cost of \$275,000 per vehicle.

Using these assumptions, the Conewago Township would incur the following costs:

“Estimated Costs of Providing Fire Protection Within Conewago Township ”
<ul style="list-style-type: none"> • Conewago Township's 2007 population of 6515 would require 0.65 fire companies; • \$715,000 annual salaries of 13 paid firefighters; • \$32,500 annual operating expenses of 0.44 fire companies; • \$73,944 cost of protective clothing/gear; and, • \$715,000 cost of emergency vehicles.

In 2007 Conewago Township has budgeted \$82,200 as contributions to SAVES. A comparison of the Township's contribution represents about 11 percent of the annual expenses needed to man and operate a paid equivalent complement of fire company sized to serve just Conewago Township. ***In order to account SAVES for the value of SAVES fire and rescue services, each of the Township's 2520 households would need to pay about \$297 per year to cover operating expenses.*** These figures do not even consider the capital costs associated with protective clothing/gear and emergency vehicles that would substantially increase monies needed. Undeniably, local volunteers have made, and continue to make, huge contributions to the safety and financial well-being of the Township and adjoining region. It is vital that their efforts continue!

Local officials and volunteers are aware of these difficulties. Yet, in many cases, an area's long-time residents usually financially support local fire and ambulance companies at an appropriate level. They have been historically educated about the value of local volunteer efforts. However, as the Township has grown and will continue to do so, many new residents have moved here from other, more urban, locations where paid fire-fighting and ambulance services are normal. These new residents are unaware of their reliance upon, and the plight of, local volunteer companies. Therefore, ***the Township should cultivate awareness among the newly-arrived residents of the need for***

their financial and manpower support to sustain volunteer firefighting and ambulance services.

To accomplish this awareness, the local fire chiefs should work with the Township on a regular and ongoing basis to mount an educational and media campaign. Such campaign should exceed the traditional general campaign that merely includes statements like the following:

- ***“Local volunteer fire and ambulance campaigns depend entirely upon your donations”;***
- ***“Not a single tax dollar is used by local volunteer fire and ambulance companies.”***

The new campaign could be more of an “in-your-face” effort that presents specific findings and presents hard, “credible” facts about the cost of delivering these services and the foreseeable equipment needs of the various companies. It could explain the benefits of new equipment and what it can mean to the Township. It could also portray the competent plans of the local companies in their attempts to ensure an adequate level of protection in the near and long-range future. Schedules for equipment replacements and upgrades could be accompanied with target financial goals to which the public can respond. Citizens should gain an understanding that local companies really need this equipment, and that they are not just “after” the newest and shiniest truck on the market.

To demonstrate these facts, the Region could (through the above-described Alliance) apply to the PA DCED for the preparation of a technical review, as part of its Shared Municipal Service Program, at no cost to the Region. This will require the preparation of a “Single Application for Assistance,” a copy of which can be found online at www.esa.dced.state.pa.us. The PA DCED will examine the adequacy of the Region’s equipment to provide adequate service. Then, the results of these impartial and objective analyses should be used to program needed equipment purchases, and justify funding requests and pledge drives in the ongoing media and educational campaign. In addition, the results of the analysis can be used as justification for additional application to the PA DCED for 50/50 matching grants for other equipment needs, like communications and dry-hydrant programs.

Other related facts that should be emphasized to the public include:

- Local volunteer fire and ambulance companies are responding to ever-increasing numbers of calls based upon the Region’s growth with actual figures presented; and,
- Local volunteer fire and ambulance companies are responding to a wider variety of types of calls and that the amount of time spent per incident is also increasing.

As a byproduct of this campaign, the municipalities could annually, publicly present the names of those businesses and individuals who contribute to the various companies. This will publicly recognize those who offered support, and potentially impose peer pressure to others who have not contributed to these important efforts. In addition, some volunteer ambulance companies have begun to affix advertising logos on the sides of their vehicles for private sponsors who contribute substantial sums each year.

Even though local volunteer firefighters are described as strong-willed, determined and fiercely independent, most agree that difficult times lie ahead. Therefore, as a long-term strategy, ***local volunteer fire companies and municipal officials could begin to explore the partial and gradual use of other funding mechanisms (e.g., billing for responses, fire tax, etc.), so that these measures can be phased-in, in support of local volunteer efforts, rather than allowing for complete failure of the volunteer system which would then be replaced by a completely-paid force.***

E. Township Government

This section provides a description of the Township's government structure and function. The role of local officials, boards, commissions, authorities, committees, and staff are set forth to provide an understanding of the hierarchy of local decision-making, input into these decisions, and the role of citizen involvement.

Office Address

541 Oxford Avenue, Hanover, PA 17331

Office Phone Number

(717) 637-0411

Office Fax Number

(717) 637-6826

Office Hours

Mon. – 8:00 a.m. to 6:00 p.m.

Tues. thru Fri. 8:00 a.m. to 4:00 p.m.



Conewago Township Municipal Building

Description of Office and Facilities: The current municipal building was constructed in the year 2000 and is located on the east side of Oxford Avenue just north of the intersection with Edgegrove Road. It contains 5 offices, a meeting room and another conference/executive session room, all with a total floor area of 6250 square feet. All rooms are ADA compliant.

Municipal Staff: The non-Police Department staff currently consists of nine paid employees as follows:

- Full-time Manager;
- Full-time Zoning Officer / Planner;
- Secretary Treasurer;
- Sewer Clerk;
- Clerk;
- Road Foreman; and,
- 3 full-time maintenance crew.

Board of Supervisors: the Board of Supervisors is the elected governing body of the Township. The 5-member Board meets in the Municipal Building on the third Monday of the month, at 7:00 p.m. Each supervisor serves a 6-year term. The Board of Supervisors performs all legislative functions within the Township and oversees the

general administration of Township functions through its staff. It also hires police officers and staff and appoints members to various boards as follows. The Board of Supervisors also act in a quasi-judicial manner when reviewing conditional use applications under the terms of the Zoning Ordinance. The Board of Supervisors also are responsible for final action on all applications submitted under the terms of the Township's Subdivision and Land Development Ordinance. Finally, the Board of Supervisors is responsible for adoption and implementation of this Comprehensive Plan.

Planning Commission: Members are appointed for 5-year terms. The 5 members meet in the Municipal Building on the first Thursday of the month, at 7:00 p.m. The Planning Commission reviews various planning, zoning and land development proposals, then offers recommendations to the Board of Supervisors. The Planning Commission is also responsible for the preparation of the initial draft of this Comprehensive Plan.

Zoning Hearing Board: The 5 members are appointed for 5-year terms and meet the first Wednesday of the month at 7:00 p.m. The Zoning Hearing Board provides quasi-judicial functions relating to prescribed applications and appeals under the terms of the Township Zoning Ordinance.

Municipal Authority: Public sewer service is provided within the Township by the Conewago Township Municipal Authority (CTMA). The CTMA is comprised of 5 members who are appointed by the Board of Supervisors to serve 4-year terms. They meet at the Township Office on the second Monday of March, June, September and December of each year to oversee management of the system and resolve policy issues. The CTMA is a conveyance-only authority as all sewage is collected and conveyed to the Hanover Area Regional Wastewater Treatment Plant.

Agricultural Security Area Advisory Committee – The Township does not have its own Committee and refers interested parties to the Adams County Agricultural and Natural Resource Center, 670 Old Harrisburg Pike, Gettysburg, PA 17325.

Environmental Advisory Council – This council is being formed as this Plan is being prepared.

F. Public Libraries

NEW OXFORD LIBRARY

Location: 122 North Peter Street, New Oxford, PA 17350

Phone: (717) 624-2182

Fax: (717) 334-7982

Website: <http://www.adamslibrary.org/noal/>

Service Area: The Adams County Library systems serves the entire Adams County.



Hours of Operation:

- Monday & Thursday-2:00 p.m.-8:00 p.m.
- Tues., Wed. and Fri. - 11:00 a.m.-5:00 p.m.
- Saturday-10:a.m.-4:00 p.m.
- Sunday-Closed

Personnel: This library has a full-time branch manager and one assistant.

Facilities Inventory: One room houses 16,000+ items (books, audio visual materials, etc.), 4 public computers.

Major Problems: Space for materials and programs.

Funding: 49% Adams County Millage, 49% State aid and 2% local fundraising by Friends Group.

GUTHRIE MEMORIAL LIBRARY

Location: 2 Library Place, Hanover, PA 17331-2283

Phone: (717) 632-5183

Fax: (717) 632-7565

Website: <http://www.hanoverlibrary.org/>

Service Area: The library serves Hanover Borough and Manheim, Paradise, Penn and West Manheim Townships within York County as assigned by Commonwealth Libraries.

Hours of Operation:

- Monday thru Thurs. - 10:00 a.m.-9:00 p.m.
- Friday - 10:00 a.m.-5:00 p.m.
- Saturday-10:a.m.- 2:00 p.m.
- Sunday-Closed

Personnel: This library has a 22 full and part time staff and numerous volunteers.

Facilities Inventory: 84,000 books, 10,000 non-print items, 32 public internet computers and 6 meeting rooms.

Major Problems: Inadequate parking for peak use periods.

Funding: 45% Hanover Borough, 10% York County, 23% State aid, 8% municipalities, 6% interest, 5% fees and 3% donations.

VIII. Utilities

A. SEWER SERVICE

Public sewer service is provided within the Township by the Conewago Township Municipal Authority (CTMA). The CTMA is comprised of 5 members who are appointed by the Board of Supervisors to serve 4-year terms. They meet at the Township Office on the second Monday of March, June, September and December of each year to oversee management of the system and resolve policy issues. The CTMA is a conveyance-only authority as all sewage is collected and conveyed to the Hanover Area Regional Wastewater Treatment Plant. Over the last few years Hanover Borough has been under a PA DEP Corrective Action Plan to help reduce inflow and infiltration problems and effectively increase the treatments plant's hydraulic capacity. The Township is operating under its Official Sewage Planning (Act 537 Plan) adopted in March 1995; however, the Township is participating in the regional Act 537 Plan update for the Hanover Area Regional system. Much of the information within this section was derived from a survey completed by the CTMA's engineer.

SYSTEM HISTORY

Public sewer service within Conewago Township was originally provided to a few properties within Midway in 1965 by the Borough of Hanover. Associated with grant monies made available in the 1970s, the PA DEP wanted Hanover Borough to expand its service area throughout the region. Then in 1980 the CTMA was created so that the Township could better manage its sewer needs at a higher level of independence from Hanover Borough. Over time, increasing on-lot malfunctions caused public sewers to be extended to the villages of Edgemoor, Brushtown and Mount Pleasant. Given the scattered locations of these historic villages, sewers continued to fan-out throughout much of the Township to serve new developments. In turn, as newer subdivisions were proposed they had ready access to nearby sewer lines already in place. In turn, today the Township has an extensive system of public sewers that stretch throughout all but a few limited development areas.

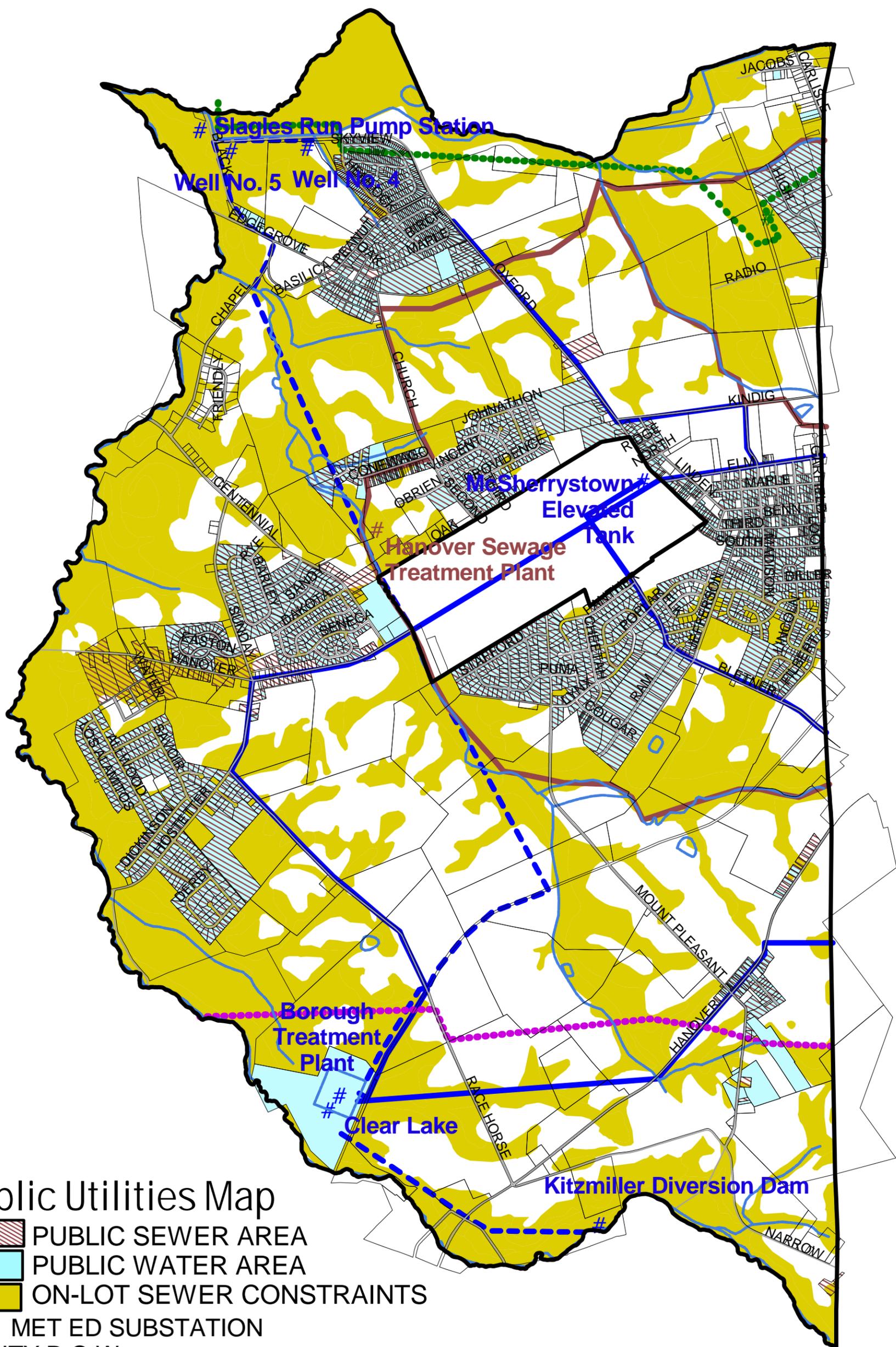
EXISTING CONVEYANCE LINES

Today the CTMA's collection lines extend throughout almost all developed areas of the Township. Generally the southern half of the Township, except for the Village of Mount Pleasant, is free from sewer lines. However, the densely developed neighborhoods of Midway and the newer suburbs all have extensive sewage collection networks. The location of "sewered" properties is depicted on the Public Utilities Map contained on the following page.

The CTMA's collection system consists of approximately 146,500 lineal feet of gravity sewer lines between 8 and 12 inches in diameter, 6500 lineal feet of force main and one duplex pump station within the Allwood Manor subdivision.



View of repaired sewer line



Public Utilities Map

-  PUBLIC SEWER AREA
-  PUBLIC WATER AREA
-  ON-LOT SEWER CONSTRAINTS

- # MET ED SUBSTATION
- UTILITY R.O.W.s
-  Columbia Gas Transmission
-  Met Ed Powerline
- # SEWER TREATMENT PLANT
-  SEWER MAINS
- # WATER SYSTEM FEATURE
- WATER MAINS
-  Potable Water
-  Raw Water



Conewago Township

Adams County, PA



Collection lines within Midway are made of vitrified clay which over time have deteriorated, and cracked. The Township is currently in the process of identifying inflow and infiltration problems by televising these lines and making repairs by inserting sleeves that will restore their sealed integrity. In other areas of the Township, lines are constructed of PVC pipe; these sanitary lines and manholes have been recently inspected as part of an ongoing GPS mapping project and have been examined to be in good condition.

The Allwood Manor pump station is located on the Township's proposed parkland within the development and has a capacity of 316,000 gallons per day (gpd). This pumping capacity will be reached once its proposed developments (Allwood Manor Phase V and the Villa's at Cattail) are completed.

It is also important to understand that the Hanover Area Region has three large interceptors that traverse areas of the Township.

First, the Plum Creek interceptor generally parallels the Creek; this interceptor accepts flows from Conewago Township for the neighborhoods generally located south of Midway and south and west of the Borough of McSherrystown. This interceptor also carries flows from McSherrystown Borough and adjoining Penn Township (York County) through Conewago Township on its way to the Hanover Area Regional Wastewater Treatment Plant. Presently, a portion of the Plum Creek Interceptor located between the Penn Township boundary and a manhole located just south of the Conewago Industrial Park is under the PA DEP Corrective Action Plan. Consequently, until inflow and infiltration problems are resolved, new connections are limited.

A second interceptor extends "across country" in an east to west alignment in the northern portion of the Township from the Penn Township line to the Edgegrove pump station just south of the Village of Edgegrove. From here it becomes a force main interceptor southward along Church Street and onto Conewago Drive where it then follows, by gravity, along Plum Creek south to the treatment plant. This interceptor accepts flows from within Conewago Township from the commercial industrial developments in the vicinity of High Street, the Village of Edgegrove and its surrounding suburban neighborhoods and the neighborhoods straddling Conewago Drive.

Third, another interceptor passes through the Township from Hanover Borough along an unnamed tributary to the South Branch of the Conewago Creek to the above-described interceptor. This interceptor accepts flows from within Conewago Township from a portion of Midway, and the commercial industrial developments along Kindig Drive. Presently, this interceptor is under the PA DEP Corrective Action Plan, presumably related to the inflow and infiltration problems attributed to the older deteriorating lines within Midway. Consequently, until these problems are resolved, new connections are limited. Because, this interceptor also flows into the preceding one described just above, it too suffers from the same restrictions on future connections.

TREATMENT PROCESSES & CAPACITY

The Hanover Area Regional Wastewater Treatment Plant is actually located within Conewago Township at the end of O'Brien Lane just northwest of the Borough of McSherrystown. This facility serves Conewago Township, McSherryston Borough, and Hanover Borough and Penn Township, both in York County. Sewage flows to this site via several regional interceptors described above plus local lines emanating from Conewago

Township and McSherrystown Borough. The plant utilizes a tertiary treatment process with biological, settling and filtration components.

The Plant outfalls into the South Branch of the Conewago Creek under National Pollutant Discharge Elimination System (NPDES) Permit No. PA0026875. Presently the plant has no hydraulic restrictions on the amount of treated waste that can be released at this location. However, the ongoing update to the Borough's Act 537 Plan will address the PA DEP Corrective Action Plan to reduce the levels of total nitrogen and phosphorus to within acceptable levels in accordance with Chesapeake Bay guidelines; such Plan is also considering sewage flows generated from within Conewago Township as part of this planning process.



Hanover Area Regional Wastewater Treatment Plant

Presently the treatment plant's hydraulic capacity is rated at 4.5 million gallons per day (MGD.) However, recent improvements at the plant have not been formally evaluated by the PA DEP. Therefore, it is expected that once this occurs, the Plant will be re-rated to a capacity of 5.5 MGD.

The Township has a reserved capacity of 12.3 percent of the total capacity; therefore, today it reserves 553,500 gpd. The Township's year 2006 metered flows averaged 621,000 gpd, or 67,500 gpd more than is presently reserved. It is hoped that the ongoing inflow and infiltration repairs occurring within Midway will reduce the actual sewage generated within the Township

The year 2006 flows generated within Conewago Township by various land uses types is presented below: Today the average sewage flow to the treatment plant is tabulated below:

Year 2006 Sewage Flows Generated within Conewago Township		
Land Use	No. of Connections	Average Effluent Generated (Gallons Per Day)
Residential	2521	562,723 gpd
Commercial	83	25,000 gpd
Industrial	13	31,344 gpd
Public/Institutional	2	1,933 gpd
Total	836	621,000 gpd, or (0.621 MGD)

Based upon the year 2006 flows, the Township has a flow that exceeds its reserved treatment capacity by 67,500 gpd. It is hoped that the flow reduction associated with the CTMA’s inflow and infiltration repairs underway within Midway under the PA DEP Corrective Action Plan will reduce and eliminate this deficit.

FUTURE PUBLIC SEWER NEEDS

Based upon this Plan’s goals to “balance” proposed developments amid protected important natural open spaces and farmlands, the use of public utilities becomes vital. Compact “growing-greener” neighborhoods promote densities that are most effective with the use of public utilities. On one hand the CTMA is fortunate to have an extensive conveyance system that reaches nearly all areas of the Township, as this provides ready access to public sewers for new developments. However, this same ready access also invites conversion of important natural and cultural features premised upon the availability of public utilities. Clearly this plan will require careful and deliberate attention to this “balance” so that defensible urban growth boundaries and zoning boundaries are identified.

One technique that can assist the Township is “staging” growth. Staging refers not only to identifying the proper location for proposed growth, but also focusing upon a proper sequence and timing of developments. Sequencing and timing offer additional protection to important natural features when developments and utilities and converge into a particular locale that transcends mere locational considerations. The Township can reasonably resist the development of a valuable natural feature when a less valuable/sensitive property can meet the Township’s projected growth given similar characteristics (e.g. location, availability of utilities, road access, etc.) Given these goals and objectives it is vital to ensure that the Township has sufficient public utility capacity to implement these sound planning techniques.

To project future sewage flows several assumptions must be made as follows:

Assumptions to Project Future Public Sewer Treatment Capacity	
1.	The Township will grow by 1152 persons per decade between 2000 and 2020 as presented in Chapter IV of this Plan;
2.	The Township will grow by 552 housing units per decade between 2000 and 2020 as presented in Chapter IV of this Plan;
3.	The average household size will continue to reduce through year 2020 as presented in Chapter IV of this Plan;
4.	In response to goals of this plan that call for targeting growth into public utility service areas, 100% of growth will occur within areas planned for public sewer service;
5.	The current ratio of flows for residential, commercial, industrial and institutional will be maintained in the future; and,
6.	The average daily flow generated per person is 90 gpd.

G

Given these assumptions it becomes possible to project the amount of public sewage capacity needed to accommodate future growth. The following table presents this information:

Projected Public Sewage Flows 2000 to 2020					
Years	Projected new dwelling units served by public sewer (100% of total)	Projected sewer flows from new residences (90 gpd / person)	Projected nonresidential flows (10.3% of residential flow)	Remedial Connections of existing uses	Projected total flows
2006	NA	562,723 gpd (existing)	58,277 gpd (existing)	Unknown*	621,000 gpd
2006-2010	221	49,725 gpd	5,122 gpd		675,847 + gpd
2010-2020	497	120,722 gpd	12,434 gpd		809,003 + gpd
*When public utilities are extended through existing developments to serve proposed growth, some properties that have previously relied upon on-lot systems are generally connected. These potential customers must be accounted when calculating needed system conveyance and treatment capacity.					

Based upon the preceding table, the Township can expect to exceed its reserved sewage treatment plant reserve capacity even with the expected increase associated with the Plant's re-rating by the PA DEP by year 2010. Unless the infill-infiltration project underway substantially reduces existing sewage flows, the Township will need to reserve additional capacity within the Hanover Area Regional Wastewater Treatment Plant. Township officials should immediately pursue a solution to this dilemma so that public sewer service can be planned and assured to areas where much of the Township's growth is to occur.

Absent such efforts, increased and undue development pressure will be exerted upon the agricultural and conservation landscapes for rural housing. In turn the Plan's deliberate and proactive strategy to concentrate residential growth in planned utility service areas will be invalidated by its lack of infrastructure to support this strategy. The Township is much more likely to have its effective agricultural/conservation zoning regulations upheld if a judicial body can determine that the Township has adequately projected growth and advanced a deliberate strategy for its accommodation. The obligation of communities to plan extends beyond the mere placement of zones on a map; legal precedents have established that the provision of necessary public services and infrastructure are equally binding.

ACT 537 SEWAGE FACILITY PLANNING¹

In accordance with the Pennsylvania Sewage Facility Act the Borough of Hanover must maintain an up-to-date sewage facilities plan. The Borough of Hanover's Act 537 as prepared by Gannett Fleming, incorporates surrounding municipalities that contribute wastewater flows to the Borough of Hanover's Wastewater Treatment Facilities. The Borough's Official Sewage Facilities Plan Update provides planning for the following five areas: the Borough of Hanover, a portion of Penn Township in York County, the Borough of McSherrystown, Conewago Township in Adams County, and a portion of Oxford Township in Adams County. The following will summarize Conewago Township's role in Hanover Borough's Act 537 plan.

¹ Information provided by Wm. F. Hill & Associates, Inc.

Conewago Township has two major roles in the Borough of Hanover's Act 537 Plan.

The first role or commitment is a corrective action plan for Conewago Township. The corrective action plan has been adopted to help reduce infiltration and inflow problems in the collection system. This is accomplished by monitoring flows, televising lines, and repairing problems in the collection systems. The Borough of Hanover's Act 537 Plan provides an outline of a projected infiltration and inflow rehabilitation program. The outline incorporates a timetable along with anticipated work that starts now and continues till 2014. Significant problem areas or areas of concern will be rehabilitated first and should be completed by 2010.

The second obligation for Conewago Township will be to participate financially with the upgrade to the Borough of Hanover's Wastewater Treatment Facility and the rehabilitation of sanitary sewer interceptors. This would include a hydraulic upgrade for more design capacity to 5.6 MGD and an upgrade to meet current and future total nitrogen loads implemented by the PA DEP through the Chesapeake Bay Strategy Plan. Conewago Township currently retains a capacity of 553,500 gallons per day of the 4.5 million gallons per day design capacity at the Hanover Area Regional Wastewater Treatment Plant. According to estimated cost breakdowns provided by Hanover Borough the hydraulic and total nitrogen upgrades will cost a total of \$13,692,300. Rehabilitation of sanitary sewer interceptors will cost approximately a total of \$8,272,530. Conewago Township's cost for the wastewater treatment plant upgrades is estimated to be \$3,581,073 and cost for the rehabilitation of sanitary sewer interceptors is estimated at \$1,273,597. Both the total cost and Conewago Township's cost is based on 2007 prices.

ON LOT SEWAGE DISPOSAL SYSTEMS

Given portions of the Township's rural character, some use of on-lot sewage disposal systems (OLDS) will continue. As presented in Chapter 3, a majority of the Township's soils are characterized with severe limitations for on-lot sewage disposal systems. This reinforces the Township's contention that:

1. most growth should be targeted in the readily available public sewer service areas;
2. permitted residential densities should be limited at very rural levels; and,
3. the Township exercise careful scrutiny in the review of proposed sewer modules for new uses to rely upon OLDs.

According to the Township SEO, the Township has minor "issues" regarding its existing on-lot sewage systems. He believes that some on-lot malfunctioning systems are found in the vicinities of Carlisle Pike, Narrow Drive and Centennial Road. He suggests that these would be good candidates for remedial public sewer service.

Often some OLDs were installed before State regulations governing design and installation methods were in place. Consequently, these older systems tend to fail over time and the sewage rises to the land surface.

On-lot disposal systems, if constructed and maintained properly, can provide a reliable and efficient means of wastewater treatment in rural areas where population density is low. However, where such systems are improperly installed or not maintained, contamination of on-site water supplies can result. The goals of this plan emphasize protection of the

B. PUBLIC WATER

HISTORY & SERVICE AREA

Public water within the Township is provided by the Hanover Borough Water Department. This Department is governed by an 11 member board which is appointed by the Borough Council to serve 4-year terms. They meet on the second and fourth Wednesday of each month at the Borough Office located at 44 Frederick Street, Hanover, PA 17331. The Water Department serves Hanover Borough and Penn Township in York County and Conewago Township and McSherrystown Borough in Adams County.

The original system was owned by the private Hanover Water Company formed in 1872. In 1896 the Consumer Water Company purchased the system and expanded service into Conewago Township along Third Street in Midway and to the Borough of McSherrystown. The Company changed its name to the Hanover-McSherrystown Water Company. A drought in 1930 caused the tap water to become dark brown, foul smelling and sediment laden. At the same time the stock market crash caused the company to fail financially and the Borough Council acquired the water company with generous assistance from several local philanthropists (H. D. Sheppard and C. N. Myers).

Over the years several severe droughts have caused the Borough to increase its supply and storage capacities.

WATER SOURCES

Today the system relies upon the following sources:

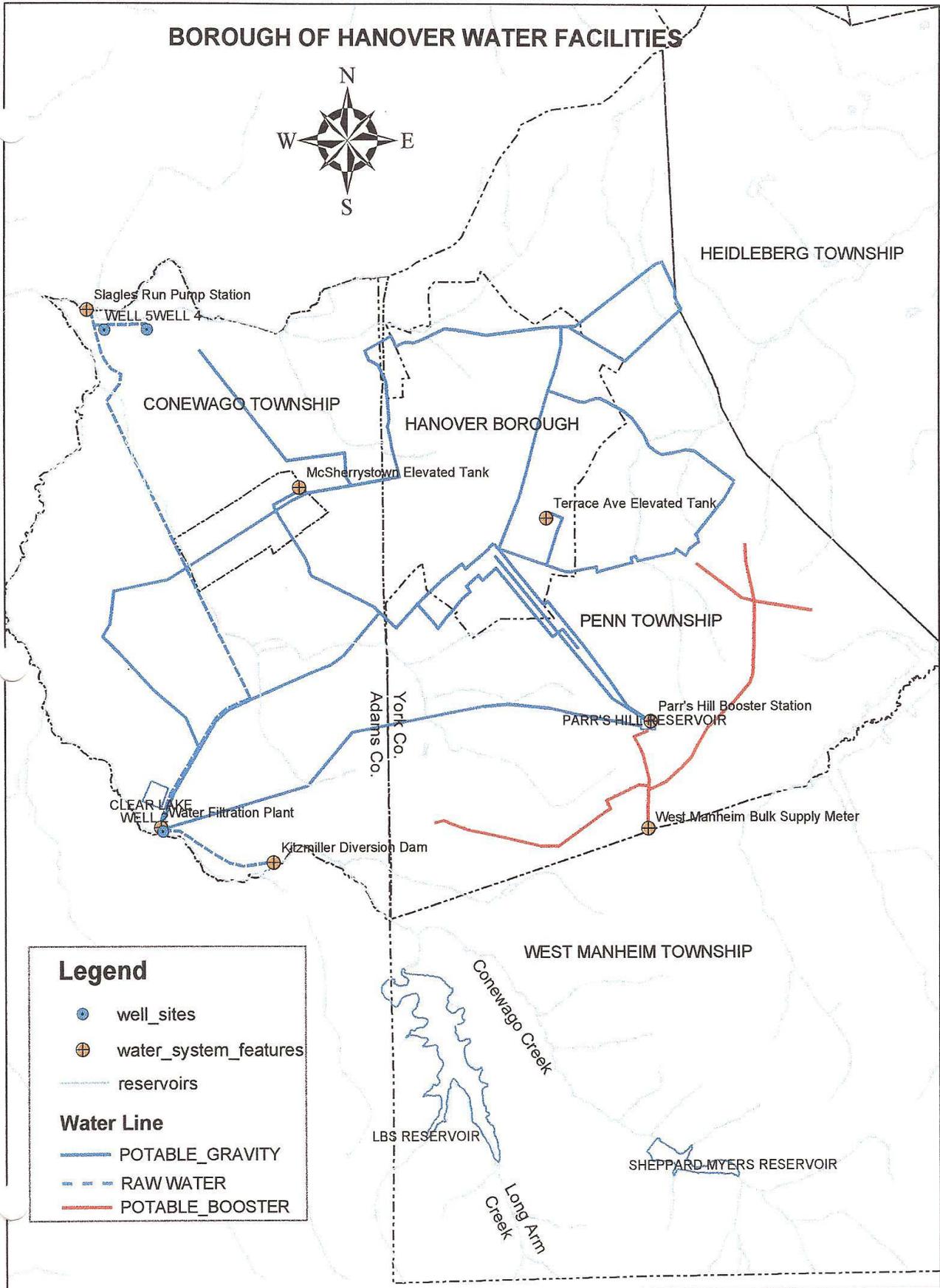
Public Water Sources of the Hanover Borough Water Department		
Name	Location	Capacity (gallons) / Yield (gpd)
Lawrence Baker Sheppard (Long Arm) Dam	West Manheim Twp.	1,660,000,000 gallons
Sheppard Myers Dam	West Manheim Twp.	190,400,000 gallons
Kitzmiller Intake	Conewago Twp.	15,000,000 gallons
Slagle Run Intake	Conewago Twp.	4,800,000 gpd
Well No. 2	Conewago Twp.	180,000 gpd
Well No. 4	Conewago Twp.	4,000,000 gpd
Well No. 5	Conewago Twp.	

Raw water from the Lawrence Baker Sheppard and Sheppard Myers Dams flows northwesterly from West Manheim Township via the South Branch of the Conewago Creek where 15 million gallons is pooled in the streambed at the Kitzmiller Diversion Dam. A 36-inch reinforced concrete line diverts raw water into Clear Lake adjoining the treatment plant.

Well No. 2 is located near the treatment plant and was previously only used on an emergency basis; however, a permanent use permit has been requested from the PA DEP, so that this well water can be mixed with other well water entering the treatment plant.

The Slagles Run Intake and Well Nos. 4 and 5 are located in the northern reaches of Conewago Township. The Slagles Run Intake pumps raw waters from the upstream Vulcan Material Company quarry and the local drainage basin. Well Nos. 4 and 5 can produce up to a combined 4 MGD. All of this raw water is conveyed south along Plum Creek then along what appears to be a private right-of-way owned by the Hanover Shoe Farms, Inc. (as depicted on the Overall Sewer Plan of the Conewago Township Municipal Authority as prepared by Wm. F. Hill & Associates, Inc.) into the treatment plant. All of these sources and conveyance lines are depicted on the following map provided by the Borough.

BOROUGH OF HANOVER WATER FACILITIES



Legend

- well_sites
- ⊕ water_system_features
- reservoirs

Water Line

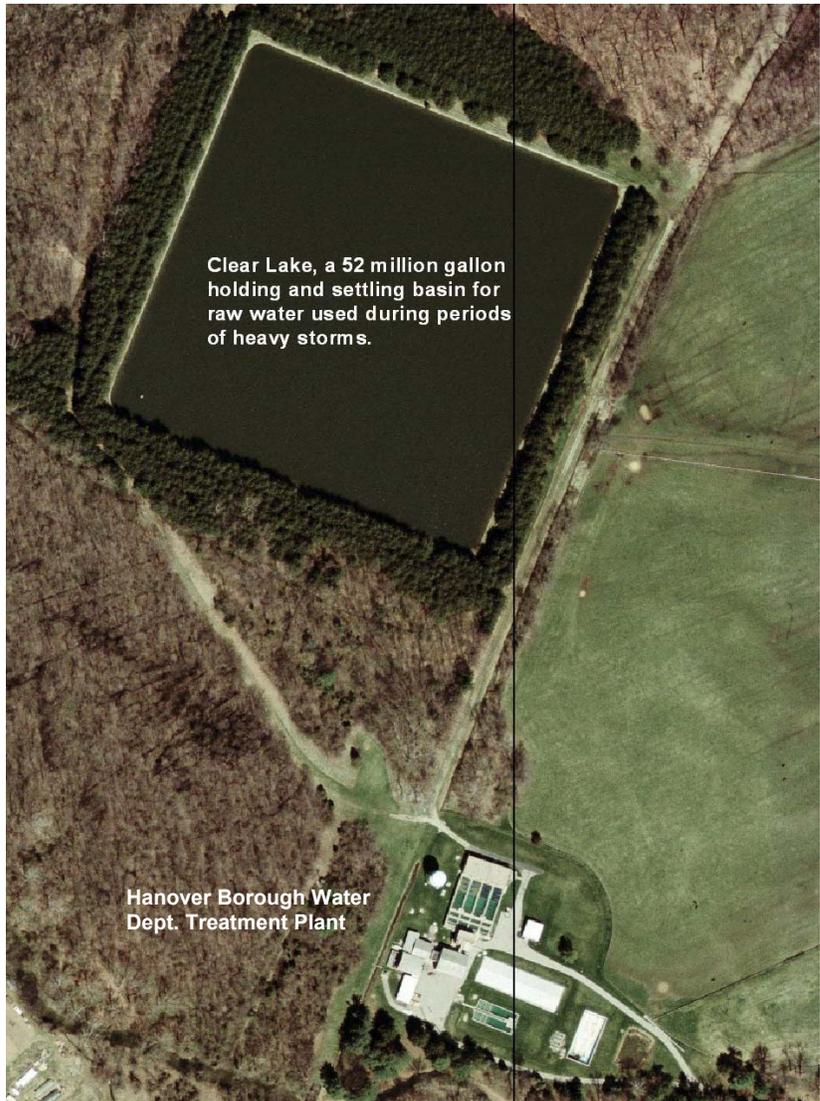
- POTABLE_GRAVITY
- - - RAW WATER
- POTABLE_BOOSTER

TREATMENT, STORAGE AND CONVEYANCE FACILITIES

Water Treatment - The Borough's Water Treatment Plant is located along a private right-of-way held by the Hanover Shoe Farms, Inc. located in the southwest corner of Conewago Township. This facility uses seven single rapid sand filters with a total capacity of 3.5 MGD. Two other double-unit multimedia filters have a total capacity of 8 MGD. The total plant capacity is 11 MGD.

Other treatments include pre-chlorination, coagulation, sedimentation, filtration, post chlorination, fluoridation and ph adjustment. The Borough has 40 samples analyzed per month by certified laboratories in addition to those performed routinely at the plant.

Total raw water storage capacity is 1,904,804,000 gallons at the Lawrence Baker Sheppard Dam, Sheppard Myers Dam, Kitzmiller Diversion Dam and Clear Lake.



Treated water is pumped from the treatment plant to two reservoirs located at Parr's Hill, the McSherrystown storage tank and the Terrace Hill Storage Tank. The following tabulates these features which have a combined capacity of 13,950,000 gallons:

Treated Water Storage of the Hanover Borough Water Department		
Name	Location	Capacity (gallons)
2 covered Reservoirs at Parr's Hill	Penn Township (York Co.)	13,200,000 gallons
McSherrystown Storage Tank	McSherrystown Borough	250,000 gallons
Terrace Ave. Storage Tank	Hanover Borough	500,000 gallons

With an average daily consumption (year 2006) of 5,411,364 gpd, these treated storage reserves furnish ample water supply for about 2.43 days of reserve capacity. A general rule-of-thumb suggests that reserve water capacity of 2.5 days is desirable; therefore the Borough has adequate reserve treated water storage capacity.

The Borough’s treated water reservoirs and storage tanks are connected to the system’s gravity-fed distribution lines; however, a booster station is installed at the Parr’s Hill Reservoirs to increase effective water pressure in the southeastern service area. The system has about 193 miles of cast iron and ductile iron water mains ranging in size from 4 to 20 inches in diameter.

EXISTING PUBLIC WATER FLOWS

In the year 2006, the following tabulates the consumption rates of public water through the system by land use types:

Year 2006 Township Public Water Consumption Rate			
Land Use	No. of Customers	Total Gallons Consumed	Consumption / EDU
Residential	2,427	129,861,000 (81.1%)	147 g.p.d.
Commercial	77	9,842,000 (6.2%)	350 g.p.d.
Industrial	25	19,368,000 (12.1%)	2123 g.p.d.
Public	4	928,000 (0.5%)	636 g.p.d.
Total	2,533	159,999,000 (100%)	174 g.p.d.

In year 2006, some 5,411,364 gpd were consumed by all of those served by this public water system. This represents about 49 percent of the Borough’s treatment plant capacity, 39 percent of its treated water storage capacity and 0.3 percent of the systems total source yields. Obviously, this system can accommodate substantial growth within its current physical and operating parameters.

FUTURE PUBLIC WATER NEEDS

As discussed earlier for future public sewer needs, the goals of this plan advocate the use of public utilities to serve compact growth areas within designated urban growth boundaries to relieve development pressures in outlying rural areas characterized by sensitive and/or productive natural features. These compact growth areas are to accommodate the all of the Township’s planned urban growth through the year 2020. Therefore many of the same assumptions that were used to project future sewage flows will be applied to public water.

Assumptions to Project Future Public Water Demand	
1.	The Township will grow by 1152 persons per decade between 2000 and 2020 as presented in Chapter IV of this Plan;
2.	The Township will grow by 552 housing units per decade between 2000 and 2020 as presented in Chapter IV of this Plan;
3.	The average household size will continue to reduce through year 2020 as presented in Chapter IV of this Plan;
4.	In response to goals of this plan that call for targeting growth into public utility service areas, 100% of growth will occur within areas planned for public sewer service;
5.	The current ratio of flows for residential, commercial, industrial and institutional will be maintained in the future; and,
6.	The average daily flow generated per connection is 174 gpd.

With these assumptions it becomes possible to project the amount of public sewage capacity needed to accommodate future growth. The following table presents this information:

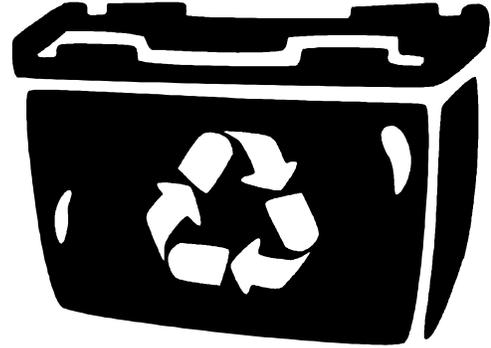
Projected Public Water Demand 2001 to 2020					
Year	Projected new dwelling units served by public water (100% of total)	Projected water needed for new residences (147 gpd/unit)	Projected nonresidential needs (23.2% of residential demand)	Remedial Connections of existing uses	Projected total needed water
2006	NA	355,784 gpd (existing)	82,542 gpd (existing)	Unknown*	438,326 gpd
2006-2010	221	32,487 gpd	7,537 gpd		478,350+ gpd
2010-2020	497	73,059 gpd	16,950 gpd		568,359+ gpd

*When public utilities are extended through existing developments to serve proposed growth, some properties that have previously relied upon on-lot wells are generally connected. These potential customers must be accounted when calculating needed system conveyance and treatment capacity.

With this information Township Officials should ensure that adequate public water capacity is available to legitimize its land use policies that rely upon adequate and ready access to public utilities to accommodate compact “growing greener” developments. Like with public sewers, the use of public water must become a priority if the Township’s allocation of growth is to withstand legal challenge.

C. SOLID WASTE DISPOSAL

Under Chapter 15 of the PA Municipal Waste Planning, Recycling and Waste Reduction Act 101, municipalities with a population of at least 5000 and a density exceeding 300 persons per square mile are required to “establish and implement a source-separation and collection program for recyclable materials. Such determinations are based upon the most recent decennial census conducted by the US Census Bureau. Conewago Township surpassed this threshold during the year 2000 US Census and is therefore required to establish and implement a recycling collection program. The PA DEP has notified local officials that Conewago Township does not comply with several aspects of the State recycling law and its guidelines.



“Residential curbside collection services for waste and recyclables is mandatory in the Township and is implemented via contract with Waste Management, Inc. The current contract is a joint contract with Gettysburg and Conewago Townships. The joint waste collection contract, which includes disposal of municipal waste, was facilitated by Adams County. Adams County has actively assisted 22 local municipalities in implementing contract collection programs. Under the current contract, Waste Management is required to collect, remove and properly process or dispose of municipal waste, large items and recyclable materials from all residential dwellings, multi-family dwellings, mobile home parks, churches and municipal offices. Large commercial establishments are not included under the contract.”

“Under the current contract, residents receive the following services:

- Weekly curbside trash collection;
- Weekly curbside recycling collection;
- Weekly bulky item pick-up upon request; and,
- Seasonal Christmas tree collection.

“As agreed between Conewago Township and Waste Management, the following recyclables are collected commingled on the same day as trash from residential establishments, small businesses, multi-family dwellings, mobile home parks, churches, and municipal offices.

- Aluminum cans
- Steel/bimetallic cans
- Clear glass
- Colored glass (green and brown)
- Newsprint
- Office paper
- Cardboard
- Plastic beverage/detergent

“Some residents have 22-gallon recycling bins that were distributed by the Township. Other residents are responsible for providing their own recycling containers and labeling them for recycling. Waste Management has recycling stickers that can be placed directly on the containers. After collection, commingled containers and newsprint are taken to

Recycle America Alliance in York, Pennsylvania. As reported by Waste Management, 351 tons of residential commingled recyclables were collected in 2006.²

In addition, small businesses that exceed the amount of waste typically generated by a household may subscribe with Waste Management for weekly or semi-weekly dumpster service. Larger businesses, industries, farms, and institutions are exempt from the Township's collection and disposal contract. These uses generally individually contract with local private haulers; under such circumstances, the private hauler is required to report upon the amounts and types of materials recycled to the Township and County. However, the Township has no formal recycling tracking system for such reporting and the extent of recycling from these larger uses is unknown. Act 101 requires all commercial, institutional and municipal uses to recycle and the Township is required to submit such information annually to Adams County who then submits Countywide totals on to the PA DEP. The PA DEP has notified local officials that Conewago Township does not comply with several aspects of the State recycling law and its guidelines.

To overcome these problems the Township has recently completed the SWANA Recycling Technical Assistance Study which recommends the following actions:

1. Increase its involvement in waste and recycling initiatives to make noticeable improvement to the program and to meet Act 101 recycling requirements.
2. Verify that the Contractor is meeting its contractual requirement to inform customers about the recycling program requirements on a semiannual basis and supplement the education information provided by the collection contractor with Township recycling information for residents and businesses (e.g. newsletters and website at a minimum).
3. Make the waste collection and recycling contract more enforceable through addition of a Liquidated Damages Policy.
4. Notify/educate residents once every six months about leaf waste, including the location of one or more local drop-off sites for leaf waste. At a minimum, residents should be informed about H&H Excavation (Country Mulch), which is a private facility located in Spring Grove.
5. Coordinate with Adams County to add curbside leaf waste collection services to the next competitive bid for waste collection services. Leaf waste services should include at least one curbside collection of garden residue, shrubbery and tree trimmings, and similar material in the spring and one curbside collection for leaves in the fall. Leaf waste pickup is commonly provided on Saturdays in this region
6. Inform commercial establishments directly about their recycling requirements by using a combination of the methods.
7. Distribute a Commercial Recyclables Report Form to all large commercial sector establishments not included in the waste collection contract.
8. Take an active roll in improving recycling by local commercial establishments through mailings, phone calls and/or visits. Target large businesses first.

² SWANA Recycling Technical Assistance Study, prepared for Conewago Township, Adams County, PA, Final Report, April 2007, pg.2.

9. Work more closely with Adams County to develop an organized approach to obtaining commercial recycling data.
10. Update the Township Solid Waste Ordinance to require all commercial, institutional and municipal establishment to report recycling data to the Township and to require recycling of:
 - High-grade office paper;
 - Cardboard;
 - Leaf waste; and,
 - Aluminum.”³

D. OTHER UTILITIES

Aside from the public sewer and water utilities described earlier in this section, several other utility lines pass through the Conewago Township. Many of the rights-of-way (ROW) associated with these utilities have distinct implications for future land use and proposed activities. This analysis inventories and maps major utility lines. ***Potential land developers and residents living near ROW should use the PA One Call System at 800-242-1776 to contact representatives of the various utility companies with regard to any proposed projects.*** The locations of the ROWs are plotted on the *Public Utilities Map*. The following describes these major rights-of-way:

Met-Ed (First Energy) Corporation

Met-Ed (First Energy) Corporation has a 115 kV overhead electrical transmission line that serves the electrical substation located along Radio Road that passes through the Township. The following present the General Restriction and Requirements for uses along this transmission line, although potential users must obtain permission from First Energy before new uses are established:

First Energy High-voltage Transmission Rights-of-Way Restrictions

Any encroachment will create a hazardous condition. Contact with or arcing of the energized conductors will cause property damage or **serious bodily injury, including death.** Other restrictions may apply for specific situations.

Safety

OSHA safe-working clearance from a person or any conductive object to the energized bare wires shall be maintained at all times.

- 500,000 volt (500-kV) lines ----- **Minimum** 19 feet, in any direction.
- 345,000 volt (345-kV) lines ----- **Minimum** 16 feet, in any direction.
- 230,000 volt (230-kV) lines ----- **Minimum** 13 feet, in any direction.
- 138,000 volt (138-kV) lines ----- **Minimum** 12 feet, in any direction.
- 115,000 volt (115-kV) lines ----- **Minimum** 11 feet, in any direction.
- 23,000 volt (23-kV) to 69,000 volt (69-kV) lines ---- **Minimum** 10 feet, in any direction

Any driveways or parking areas near First Energy structures (poles, towers, guys, etc.) shall include protective barriers. Parking or operating a vehicle within or adjacent to the right-of-way may induce an electric charge on the vehicle. Induced charges may also be imposed on objects such as fences, signs, or any other conductive object. An engineering firm should be consulted to provide a proper grounding system

³ SWANA Recycling Technical Assistance Study, prepared for Conewago Township, Adams County, PA, Executive Summary, April 2007, pgs.1-2.

to prevent induced electric shock. Construction vehicles operating near transmission lines should also be properly grounded.

No explosive or combustible liquid, substance, or material shall be located within the right-of-way. Prohibited materials include but are not limited to: fuel, wood chips, mulch, brush, and tires.

Vegetation

All vegetation on or adjacent to the right-of-way shall be low growing, (10-foot maximum height). Shrubbery planted near FirstEnergy structures (poles, towers, guys, etc.) shall allow for working area at ground level. (No closer than 10 from the structure, in any direction).

Access

No buildings, signs, billboards, swimming pools, decks, flag posts, sheds, barns, garages, playgrounds, or other structures shall be located within the right-of-way. Truck and equipment access to all Transmission-line structures shall be provided at all times. No septic systems or wells shall be located within the right-of-way.

Lighting fixtures

No lighting fixtures shall be located within the right-of-way without written approval from FirstEnergy.

Grading/Excavation

No changes to grade elevations within the right-of-way shall be made without written approval from FirstEnergy. No excavations near Transmission structures (poles, towers, guys, etc.) shall occur without written approval from FirstEnergy.

Other activities

Kite flying, model airplane flying, or similar activities is prohibited on or near FirstEnergy right-of-way.

Columbia Gas Transmission Company

The Columbia Gas Transmission Company has a 50 feet wide right-of-way for a regional underground natural gas pipeline that passes through the southern part of the Township. The following present the General Restriction and Requirements for uses along this transmission pipeline, although potential users must obtain permission from Columbia Gas Transmission Company before new uses are established:

Notify Columbia before construction begins

Columbia must be notified according to the state law before construction begins in the vicinity of its facilities. This notification shall be made through the appropriate state One-Call notification service, but follow up contact should be made with the local Columbia Gas Transmission office by calling 1-800-242-1776.

No construction or excavation activities of any kind, including blasting, shall be done on Columbia's right of way area before Columbia personnel have established the actual location of all affected facilities and the limits of the right of way. Columbia personnel must be present during any construction or excavation activities.

Excavation near pipelines/buried facilities

No excavation shall be made on the pipeline right of way without prior notification to Columbia through the state One-Call notification service. Subsequent follow-up must be made to Columbia to seek approval for the proposed construction. Approved excavations above, below or within three-feet of either side of the pipeline shall be dug using hand tools.

Crossing pipelines with heavy equipment

Columbia may require heavy equipment operators to install mats, dirt pads, or other approved protective materials to adequately protect Columbia pipelines from potential damage by heavy equipment crossing

the right of way. All proposed road crossings of buried facilities must be evaluated by Columbia personnel. Any additional over-burden must be removed after construction unless otherwise directed by Columbia personnel.

Blasting plans must be approved

Any blasting proposed within 300 feet of Columbia facilities must be submitted to Columbia in advance along with a blasting plan outlining such proposed activity. No blasting may begin unless and until Columbia provides written confirmation that it does not object to such blasting. Any modifications to the blasting plan must also be submitted to Columbia for review and should not be implemented unless and until Columbia provides written confirmation that it does not object to such modifications. The blasting contractor may be required to monitor and record seismic shock at the facilities.

Allow adequate clearance for directional drilling

Any directional drilling or boring proposed under Columbia's buried facilities must be submitted to Columbia for review and approval. Adequate clearance must be maintained from Columbia's facilities and additional excavations may be required to ensure adequate clearance. As-built plans are required for all borings.

Maintain up to 300-foot clear area around storage well heads

Property owners or developers must notify Columbia of any proposed construction or excavation within 300 feet in any direction of a natural gas storage well. For safety, Columbia reserves the right to object to any such proposed activities or placement of objects closer than 300 feet to a storage wellhead.

Construction requirements within a right of way

The requirements listed below are minimum guidelines for construction in the vicinity of Columbia pipeline rights of way to protect public safety and the integrity of Columbia's facilities. A review of individual plans and property rights may reveal more specific requirements.

1. The existing cover over pipelines and rights of way, which is normally a minimum of 36-inches and a maximum of 48-inches, shall be maintained. The minimum earth cover over pipelines at all street and road crossings, including the adjacent ditch line, shall be 36-inches; 6Q-inches minimum cover shall be maintained at stream and river crossings.
2. Above-ground or below-ground structures or obstructions of any type shall not be placed within the easement area of any pipeline, which generally extends 25 feet on each side from the center of the pipeline, or as defined in the applicable right of way or land rights agreement.
3. Pipeline easements shall not be shared longitudinally with other utilities. All water valves, curb boxes, manholes, etc. must be outside the easement. Other utilities which cross Columbia pipelines must do so at or as near 90 degrees as practical and with a minimum of 12-inches vertical clearance. Any crossing not installed below Columbia's pipelines must have prior written consent from Columbia (Location of Buried Facilities Form - Form 1050-P17). All crossings (excluding single telephone and single television drops) of Columbia facilities by cable and/or wire utilities, including but not limited to electric, fiber optic, telephone, and television lines crossing Columbia's pipelines must be encased with a minimum of 2-inch Schedule 80 PVC pipe. For safety reasons, electric and fiber optic lines shall also be surrounded with a minimum of six inches of concrete or encased with 4inch minimum diameter, .250-wall, coated steel pipe for the full width of the right-of-way. Metallic warning flags shall also be buried above all cable, wire utility, or fiber optic lines crossing a Columbia right-of-way. All crossings must be approved by Columbia before installation begins.

4. Roads shall cross pipelines at or as near 90 degrees as practical, but at angles not less than 45 degrees. The entity constructing the street must pay for any measures required by Columbia to protect its pipeline(s). Such protective measures shall be designed and/or approved by Columbia personnel.
5. Paved areas, such as parking lots, shall not be allowed over the easement unless the pavement can be altered so as not to impact the safe and reliable operation and maintenance of Columbia's pipeline. Concrete paving in Columbia's right-of-way, except for sidewalks and curbs, is prohibited. Consequently, all plans for pavement within a Columbia right-of-way must be submitted and approved by Columbia personnel before paving can begin.
6. Septic tanks and leach fields should be placed so they drain away from the pipeline where practical. In no case shall they be placed in the easement area.
7. The right-of-way may be planted in lawn and small shrubs (less than 5 feet tall) or may be used for normal agricultural purposes. However, shrubs will not be allowed within 5 feet each side of the pipeline. Shrubs greater than 5 feet tall and trees, including fruit or nut bearing trees of any kind, are prohibited within the right of way.
8. Fences that block visual inspection or interfere with access to Columbia's facilities are prohibited within Columbia rights of way. Fences permitted by Columbia to cross its rights of way must be designed with 12-foot gates centered on the pipelines and must cross at or as near to 90 degrees as possible.

IX. Transportation

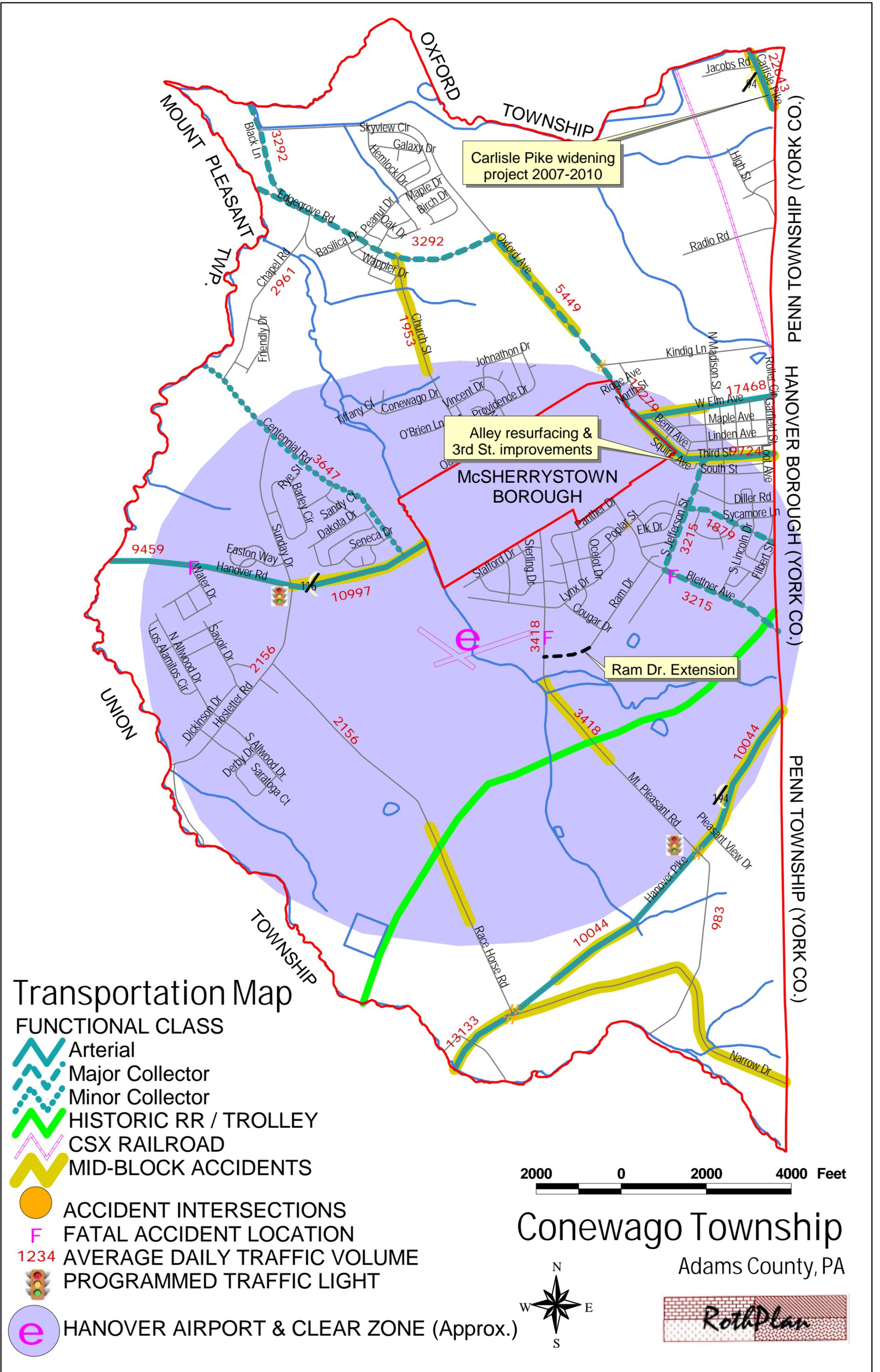
Mobility has become one of the most sought-after qualities of life of this century. The widespread use and development of automobiles, trucks and their road networks have enabled motorists to travel independently with great flexibility as to origins and destinations. Only recently, with increased congestion, has society begun to realize that the extensive use of the automobile may, in fact, be threatening both mobility and safety. This realization has led to efforts to better understand the relationship between transportation planning and land use planning, and has created renewed interest in alternative modes of transport.

First, this chapter will inventory the Township's transportation system, beginning by categorizing roadway functional classifications, as determined by the Federal Highway Administration, describing roadway design standards, and presenting available traffic volume data and accident locations according to PADOT records. A brief discussion of regional traffic impacts is followed by a description of alternative modes of transportation, railway access and aviation. All of this data is then analyzed and applied to the Township's development objectives and other available plan information to form the basis for the chapter's recommendations on future transportation needs, land use scenarios and implementation strategies. Such information should also be useful in reviewing traffic studies associated with proposed developments.

A. ROADWAY CLASSIFICATIONS AND DESIGN STANDARDS

Functional classification of roadways refers to a system by which roads are described in terms of their utility. Theoretically, roads provide for two separate functions. First, roads provide for mobility—the ability to go from one place to the next. Second, roads provide a measure of access to adjoining properties. Transportation experts use these two roadway characteristics to determine a road's functional classification.

Roads that provide for greater mobility provide for reduced land access, and vice versa. This important relationship should always be considered when allocating future land uses along existing or planned roads. The following diagram illustrates four road types: arterials, major collectors, minor collectors and locals. These road types can be further subdivided into any number of different categories, depending upon the complexity of the roadway network. However, for the purpose of this study, the Township's roadway network can be described as consisting of arterials, major collectors, minor collectors, and local roads. The roads within the Township are classified and identified on the *Transportation Map*.



Transportation Map

FUNCTIONAL CLASS

- Arterial
- Major Collector
- Minor Collector
- HISTORIC RR / TROLLEY
- CSX RAILROAD
- MID-BLOCK ACCIDENTS

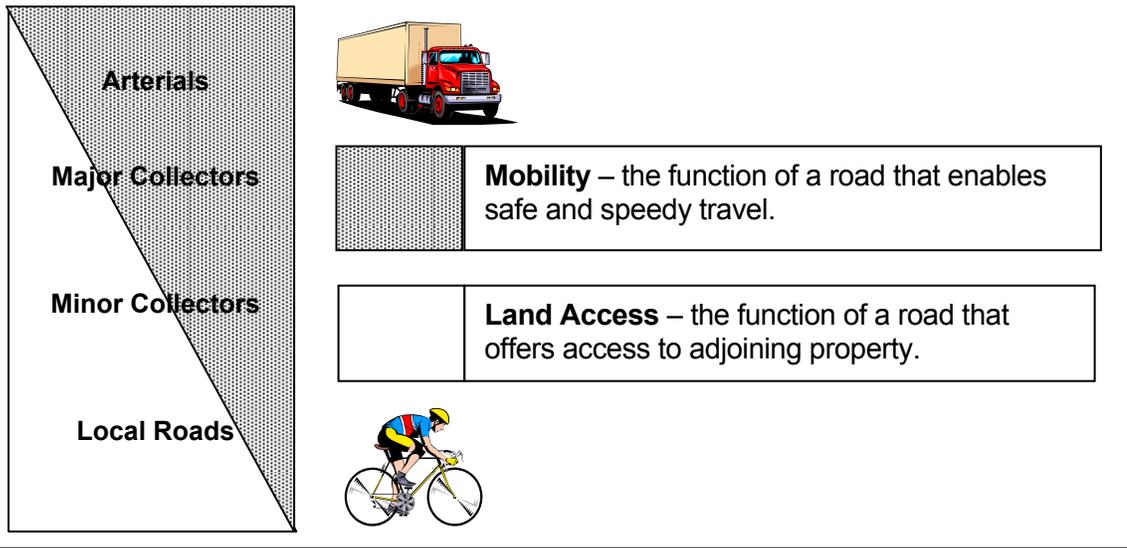
- ACCIDENT INTERSECTIONS
- FATAL ACCIDENT LOCATION
- AVERAGE DAILY TRAFFIC VOLUME
- PROGRAMMED TRAFFIC LIGHT
- HANOVER AIRPORT & CLEAR ZONE (Approx.)



Conewago Township
Adams County, PA



Relationship of Mobility Versus Land Access in Determining Roadway Functional Classification



ARTERIALS

Arterials are intended to provide for a greater degree of mobility than land access. Hence, individual driveway intersections with arterials should occur infrequently. Major arterials generally convey between 10,000 and 25,000 average daily trips (ADT) for distances greater than one mile. Rural minor arterials generally convey between 3,000 and 6,000 average daily trips (ADT) for distances greater than one mile. Arterials often connect urban centers with outlying communities and employment or shopping centers. Consequently, arterials are often primary mass transit routes that connect with “downtown” areas of nearby communities. The following sets forth design standards associated with arterial roads:

ARTERIAL ROAD DESIGN STANDARDS						
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Median Width	Right-of-Way Width	Design Speed (mph)
Maximum	5 x 12 ft.	2 x 10 ft.	2 x 20 ft.	6 ft.	126 ft.	65
Minimum	2 x 11 ft.	2 x 8 ft.	2 x 2 ft.	—	42 ft.	25

Within Conewago Township, Carlisle Pike (PA Route 94), West Elm Avenue (SR 2008), Third Street and Hanover Road (PA Route 116), and Hanover Pike (PA Route 194), all serve as arterial roads. The following present the current characteristics of these roads:

ARTERIAL ROADWAY CHARACTERISTICS					
Road Name / No.	No. Lanes	Cartway Width	Shoulder Width L/R	(1998 ADT) 2007 ADT	MPH
Carlisle Pike / SR 0094	2	24 ft.	8 / 7 ft.	(22,000) 22,643	35
West Elm Ave / SR 2008	2	38 ft.	0 / 0 ft.	(13,000) 14,279-17,468	35
Third Street / SR 0116	2	33 ft.	0 / 0 ft.	(16,000) 9,724	25
Hanover Road / SR 0116	2	22 ft.	0 / 3.5 ft.	(6,100-9,500) 9,459 – 10,997	40 - 45
Hanover Pike / SR0194	2	24 ft	0-6 / 0-6 ft	(9,400) 10,044 – 13,133	40 - 55

MAJOR COLLECTORS

Major collectors within rural settings provide for medium length travel distances (generally less than one mile) and convey between 800 and 3,000 ADT. Major collectors also provide land access to major land uses such as regional shopping centers, large industrial parks, major subdivisions, and community-wide schools and recreation facilities. Major collectors primarily serve motorists between local streets and community-wide activity centers or arterial roads. The following sets forth design standards for major collector roads:

MAJOR COLLECTOR ROAD DESIGN STANDARDS					
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Right-of-Way Width	Design Speed (mph)
Maximum	2 x 12 ft.	2 x 10 ft.	2 x 20 ft.	84 ft.	50
Minimum	2 x 11 ft.	2 x 8 ft.	NA	60 ft.	40

Within Conewago Township Black Lane (SR 2009), Edgeregrove Road and Oxford Avenue (SR 2008), Blettner Avenue (T-468), Poplar Street (T-523) and South Jefferson Street (T-529) serve as major collector roads. The following table summarizes the characteristics of the Township's major collector roadways:

MAJOR COLLECTOR ROADWAY CHARACTERISTICS					
Road Name / No.	No. Lanes	Cartway Width	Shoulder Width L/R	(1998 ADT) 2007 ADT	MPH
Black lane / SR 2009	2	20 ft.	2-3 / 2-3 ft.	(3,700) NA	35 - 40
Edgegrove Road / SR 2008	2	16 – 24 ft.	0-7 / 0-7 ft.	(3,300) 3,292	35 - 40
Oxford Avenue / SR 2008	2	24 – 38 ft.	0-7 / 0-7 ft.	(2,200) 5,419	35 - 40
Blettner Avenue / T-468	2	20 ft.	0-2 / 0 ft.	(NA) 3,215	25
Poplar Street / T-523	2	32 ft.	0 / 0 ft.	(NA) 1,879	25
S. Jefferson St. / T-529	2	20 ft.	0 / ft.	(NA) 3,215	25

MINOR COLLECTORS

Minor collectors within rural settings provide for equal amounts of mobility and land access and convey between 800 and 3,000 ADT. These streets can serve as the main circulation roads within large residential neighborhoods. Trip lengths tend to be shorter in “developed” neighborhoods, like that of a borough, due to the presence of nearby destinations or higher order roads. However, within the rural areas like Conewago Township these roads extend greater distances.

The following lists design standards for minor collector roads:

MINOR COLLECTOR ROAD DESIGN STANDARDS					
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Right-of-Way Width	Design Speed (mph)
Maximum	2 x 11 ft.	2 x 10 ft.	2 x 20 ft.	86 ft.	30
Minimum	2 x 10 ft.	2 x 4 ft.	2 x 2 ft.	32 ft.	30

Within Conewago Township, only Centennial Road (SR 2006) is identified as a minor collector road. The following table summarizes the characteristics of the Township's minor collector roadway:

MINOR COLLECTOR ROADWAY CHARACTERISTICS					
Road Name / No.	No. Lanes	Cartway Width	Shoulder Width L/R	(1998 ADT) 2007 ADT	MPH
Centennial Road / SR2006	2	20 ft.	0-4 / 0-4 ft.	(2,000) 9,459-10,997	45

Overall the Township's primary roads are in compliance with PennDOT recommended minimum design standards. The following itemizes minor deficiencies. While travel lanes are usually within 2 feet of the recommended widths, the shoulders need widened by as much as 8 feet on both sides. Shoulder improvements are not recommended on the Township's urban arterial roads due to a lack of right-of-way and the presence of adjoining sidewalks.

Most of the needed improvements involve State Roads and therefore, would require improvement by PennDOT. Local officials should act with patience to get these deficiencies corrected over time. Certainly not all of these improvements will occur at the same time but the Township should "chip-away" at these needs as funding permits. Roads with higher traffic volumes should be given priority status in this process. The following table prioritizes needed cartway and shoulder improvements based upon reported average daily traffic volumes:

RECOMMENDED IMPROVEMENTS TO ROADS			
Road Name / Route No.	Est. ADT (2007)	Needed Cartway Widening	Needed Shoulder Widening L / R
Arterial Roads			
Carlisle Pike / SR 0094*	22,643*	2 ft.*	0 / 1 ft.*
Hanover Pike / SR0194	10,044 – 13,133	0 ft.	2-8 / 2-8 ft.
Hanover Road / SR 0116	9,459 – 10,997	0 ft.	8 / 4.5 ft.
Major Collector Roads			
Oxford Avenue / SR 2008	5,419	0 ft.	1-8 / 1-8 ft.
Edgegrove Road / SR 2008	3,292	0 ft.	1-8 / 1-8 ft.
Blettner Avenue / T-468	3,215	2 ft.	6-8 / 8 ft.
S. Jefferson St. / T-529	3,215	2 ft.	8 / 8 ft.
Poplar Street / T-523	1,879	0 ft.	8 / 8 ft.
Black Lane / SR 2009	NA	0-2 ft.	5-6 / 5-6 ft.
*It is noted the Carlisle Pike is programmed for widening in the Adams County 2007-2010 Transportation Improvement Plan.			

In addition, as new developments are proposed along these highways, developers should be required to provide improvements to the existing roads that bring them in-

line with suitable design standards.

As important as road design is land use access. As discussed earlier in this Chapter, an effective conveyor of traffic cannot provide for unlimited land access. Each driveway or roadway intersection introduces conflicting traffic movements that reduce a road’s ability to convey traffic quickly and safely. **Therefore, new connections to the arterial and collector road system should be minimized to avoid unnecessary driveway and road cuts. Within the rural areas of the Township the limited density will keep the number of driveways low. However, in residential and commercial areas, local officials must enforce strict policies that will minimize such connections to ensure efficient traffic flow. Zoning and subdivision/land development regulations can limit permitted driveway cuts, require wider lots, and provide for incentives and design flexibility that encourage adjoining properties to share vehicular access among other things (e.g., parking, loading, signage, storm water control, etc.). For access on State roads, local officials should persuade PennDOT officials to limit highway access to the minimum required.**

LOCAL ROADS

Local roads are intended to provide immediate access to adjoining land uses. These roads are generally short and narrow, and comprise the bulk of road area within the Township. Local roads are intended to only provide for transportation within a particular neighborhood, or to one of the other road types already described. The following describes the suggested design standards for local streets:

MINIMUM LOCAL ROAD DESIGN STANDARDS*				
On-Street Parking	Cartway Width	Shoulders and/or sidewalks with planting strips and Width	Right-of-Way Width	Design Speed (mph)
None	18-20 ft.	2 x 6 ft.	36 ft.	25
1 side only	28 ft.	2 x 6 ft.	40 ft.	15-25
Both sides	36 ft.	2 x 6 ft.	48 ft.	15-25

All of the Township’s roads that are not classified as arterials or collectors are considered local roads.

The goals for this Plan suggest a departure from past suburban growth and development patterns. The design of local streets often determines that character of a neighborhood. In the past Townships favored wider curvilinear street patterns that emphasized the use of off-street parking. These features complimented the sprawling suburban pattern of residential development which has dominated the last half of the 20th century.

However, as growing greener initiatives are gaining popularity, these consumptive road design standards are being replaced with more pedestrian-oriented requirements that better fit within compact residential neighborhoods. Grid street patterns with limited use of cul-de-sacs offer ease of direction and provide greater inter-neighborhood connectivity. Narrower

cartways with on-street parking and even narrower pedestrian crossings reduce vehicle speeds within neighborhoods thereby balancing pedestrian and vehicle mobility. Sidewalks with landscape strips and shade trees extend throughout the neighborhoods and offer passive recreation and pedestrian connectivity beyond the confines of one subdivision.

Conewago Township should begin to target select new neighborhoods for these local streetscape designs when they can compliment a more compact residential development form and/or when new developments are proposed that adjoin existing developments (usually older neighborhoods) that have sidewalks in place.

The Township should also attempt to link key public facilities (schools, parks and playgrounds, shopping areas, etc.) with a collector sidewalk system. In this case these sidewalks will often follow State-owned roads and the Township will need to seek opportunities for public improvement projects. The Township should seek to utilize a variety of techniques for this purpose such as developer exactions or donations for deferred road improvements, block grants, growing greener grants, customary transportation grants and even mandatory dedication fees-in-lieu of open space (assuming the Township identifies key sidewalks as part of its linear park system). In some cases, cross-country trails and paths can provide the same pedestrian linkages and/or offer key interconnects with established sidewalk networks. Some municipalities are beginning to earmark mandatory dedication fees-in-lieu for target linear park projects.

Last, Conewago Township has considerable areas that are to be preserved in their rural condition. The southern half of the Township is largely agricultural in character. The Adams County Comprehensive Plan acknowledges this character by recommending that Conewago Township focus its growth elsewhere into compact villages and devise strategies for the preservation of farmlands and conservation lands.

Accordingly, the Township's planned growth within this rural area will be limited and can easily be served by the residual capacity of the Township's local road system in this vicinity. However, growth occurring outside of Conewago Township generates heavy traffic along the Hanover Pike and Hanover Road corridors that pass through the Township daily. The driving habits of daily commuters threaten the rural character of Conewago Township. Excessive vehicle speeds, beyond posted speed limits contribute to frequent traffic accidents as reported earlier. This also threatens slow-moving farm vehicles on the road and those users who engage in recreational activities upon the road and roadside.

Often society's response to such conditions involves the improvement of heavily-traveled roads by widening travel lanes and shoulders, straightening curves, and leveling the road surface. Accordingly, the carrying capacity of such roads increases along with vehicle speeds. This, in turn, induces community growth as traffic flow through the community is eased. Both of these consequences are contrary to the goals of this plan. Local officials believe that road improvements to increase road capacity would only serve the development occurring in adjoining municipalities and invite unwanted traffic flow through Conewago Township. Local officials intend to keep roadway design and posted speeds consistent with the Township's rural context.

They intend to redirect their efforts in a manner that is more consistent with the Township's goal to preserve its rural character. They understand the need to work with County and State programs to improve the Township's arterial and collector road system so that

convenient and safe “regional” traffic flow can occur through the Township. However, local officials believe that its local roads have sufficient unused capacity to meet the minimal traffic that would be generated by the Township’s projected growth. Therefore, the Township will focus upon local road improvements that:

1. Divert ever-increasing high speed traffic that passes through the Township on a regular basis;
2. Enhance the safety of residents and motorists on the road;
3. Provide for the safe and convenient movement of farm equipment and vehicles;
4. Provide for the safe use of roads and roadsides by residents engaging in recreational activities (cycling, walking, horseback-riding, horse-training, etc.);
5. Implement traffic calming measures: and,
6. Contribute to the Township’s rural character.

Some municipalities have begun to “take-back” and regrind paved surfaces to restore conditions that inhibit commuter “short-cut” travel and reduce vehicle speeds. While this approach is rather novel within Adams County, it is gaining acceptance elsewhere in more rural areas of the nation.

A recent study conducted in rural southeast Michigan determined that gravel road capacity ranges from about 200 to 1000 vehicles per day based upon the characteristics of the road (surface type, width, drainage, shoulders and alignment). A standard traffic generation rate of about 10 vehicle trips per day per dwelling unit means that areas served by gravel roads should have relatively low densities, if gravel road capacities are not to be surpassed. This study concluded that the best gravel road can only accommodate 1 dwelling unit per each 6.67 acres, while the worst gravel road capacity was only 1 dwelling unit per 32 acres.¹

These findings are consistent with the Township’s goal to preserve its rural character and prevent undue inducement of suburban sprawl. However, Township Officials should heed the warnings that “unimproved” roads require relatively low densities for lands within the road’s service area. ***Local Officials should carefully consider a campaign of rural local road take-back and resurfacing with a gravel surface as a means of improving compatibility and safety while avoiding an inducement to community growth that would exceed its local infrastructure and public service capacity.***

B. TRAFFIC SAFETY

In addition to reducing congestion, traffic safety is another important consideration in the scheduling of roadway improvements. High accident locations result from factors such as inadequate road design, insufficient sight distance, improper relationship between land use and road classification, improper speed limits, and driver frustration/error. This section describes traffic accident statistics within the Township to gain a general understanding of their location and severity. This will help to ensure a proper relationship between land use and access.

The Pennsylvania Department of Transportation, Center for Highway Safety, provided accident data for the period between 2003 and 2005. This three-year period provides the most recent reportable accident data available. A reportable accident is one in which an

¹ *The Crunch of Development Along Gravel Roads*, Michele Manning, AICP and Mark A. Wyckoff, FAICP. American Planning Association, February, 2004, pg. 2.

injury or fatality occurs, or at least one of the vehicles involved requires towing from the scene. The locations of the majority of accidents discussed on the following pages have been plotted on the *Transportation Map*.

Specific accident locations are ranked by frequency for the Township. These specific locations are ranked and reported in two categories. First, accidents that occurred at specific intersections at two or more roads are identified and ranked. Second, accidents that occurred along one road between two roads, or mid-block accidents, are enumerated and ranked. Mid-block accidents also include accidents that occurred along public roads at an intersection with a driveway.

INTERSECTION ACCIDENTS

The adjoining table ranks those intersections that recorded more than one traffic accident per year between 2003 and 2005.

Between 2003 and 2005 the Township recorded 72 total reportable traffic accidents at road intersections. The worst two intersection

INTERSECTION ACCIDENTS (2003-2005)		
Rank	Intersection	Total No. of Accidents
1	Hanover Pike, Race Horse Road & Lovers Drive	17
2	Hanover Pike & Mt. Pleasant Road	7
3	Oxford Ave & Kindig Lane	5
4	Blettner Avenue & Poplar Street	4
5	Race Horse Road and Hanover Road	3*
* Information provided by the Township between 2002 and 2007		

accident locations are both located along Hanover Pike within the southern area of the Township.

First is the intersection of Hanover Pike, Race Horse Road and Lovers drive. Here 17 total accidents occurred most of which involved drivers attempting to cross Hanover Pike and being struck by passing vehicles. Fortunately about 78 percent of these accidents involved only property damage or minor injury. Of those injured three reported moderate injury and one sustained a major injury. Since these accident statistics were reported (Year 2005) the Township has closed Lovers Drive.

The second “highest-accident” intersection occurred at Hanover Pike and Mount Pleasant Road and Narrow Drive. Here seven accidents occurred due to a variety of varying factors and conditions. Reported accidents were relatively minor with only one moderate injury reported. The Township has created an escrow account for the express purpose of signaling this intersection. To date this account totals some \$60,000 which was funded by donations per dwelling unit from nearby proposed residential developments.



Other multiple accident intersections recorded similar accident types with drivers failing to stop, speeding, and pulling out too soon. Many times these risky behaviors resulted in accidents where the driver needed to take evasive movements or overcompensated and hit a fence, tree or embankment. While it is important to note these intersection-based accidents, more accidents occur along the Township’s roads away from intersections. This

is true of most rural municipalities that have relatively few intersections when compared with overall road lengths.

MID-BLOCK ACCIDENTS

The adjoining table to the right ranks the mid-block locations with at least one reportable accident per year between 2003 and 2005.

ACCIDENT TYPES, SEVERITY & FACTORS (2003-2005)	
Accident Type	
Hit fixed object	64
Angle	56
Rear-end	26
Non-collision	8
Head-on	6
Sideswipe	4
Unknown	4
Backing-up	1
Hit pedestrian	1
Total Accidents	174
Accident Severity	
Fatal	3
Major injury	4
Moderate injury	27
Minor injury	65
Unknown injury	11
Property damage only	64
Total with injury	110
Accident Location	
Intersection	72
Mid-block	100
Probable Factors	
Proceed w/o clearance	60
Too Fast	57
Physical condition	52
Wrong side	30
Improper turn	24
Tailgating	17
Didn't stop	14
Driver distraction	11
Careless lane change	9
Over/under compensation	8
Slippery Ice/Snow	7
Deer	4
Careless backing	3
Careless parking	2

Overall mid-block accidents account for 100 of the 174 total traffic accidents recorded within the Township from 2003 to 2005 or 58 percent. This ratio of more

MID-BLOCK ACCIDENTS (2003-2005)			
Rank	Road Name	Road Number	Total No. of Accidents
1	Hanover Pike	SR0194	15
2	Race Horse Road	SR 2021	8
3	Carlisle Pike	SR0094	7
4	Mt. Pleasant Rd.	SR2006	6
4	Oxford Ave.	SR2008	6
4	Hanover Road	SR0116	6
5	Centennial Road	SR2006	5
6	Third Street	SR0116	4
6	W. Elm Ave.	SR 2008	4
6	Lovers Drive	NA	4
7	Narrow Drive	SR 2006	3
7	Church Street	SR 2011	3

frequent mid-block accidents versus intersection accidents is a byproduct of the Township's rural road system with fewer intersections and longer vehicle travel distances. Generally roads with the highest traffic volumes have a correspondingly high frequency of mid-block traffic accidents. Therefore, it is expected that the Township's arterial roads recorded the highest mid-block accidents.

The adjoining table to the left lists reportable accident types and severity within the Township. The Township recorded 174 total reportable traffic accidents between 2003-2005. The most frequent single type of accident involved vehicles swerving off of the road and hitting a fixed object due to excessive speeds or to evade another oncoming vehicle. Almost 2/3 of all accidents produce injury while four percent produce severe injury. Fortunately, about 73 percent of the Township's total accidents produce no or minor injuries. Moderate and major injuries result in 18% of all accidents.

Three fatal accidents occurred one each year between 2003- and 2005. The first fatality occurred in 2003 when a motorist traveling south on Blettner Avenue swerved off of the road and hit a tree. The second involved an impaired motorcyclist who struck a truck that was performing an improper turn at the intersection of Hanover Road and Water Drive. Last, a tailgating van rear-ended a farm vehicle traveling south on Mount Pleasant Road in 2005 causing one fatality. These fatal

accident locations are depicted on the Transportation Map.

Twenty-three percent of all accidents occur on Saturdays over five times the number recorded on Sundays and three times that recorded on Mondays. Fridays and Tuesdays also recorded higher than normal numbers of accidents. May has the greatest accident frequency, more than 1.5 times the monthly average and more than three times that occurring during the months of January and March. Year 2004 had the most accidents followed by 2005 then 2003. Over 70 percent of the total traffic accidents occurred during the daytime and the presence of street lights had little affect on the frequency of accidents after dark. Adverse weather conditions were reported during only 31 percent of accident occurrences. Unsurprisingly the evening rush hour (5PM to 6PM) had the highest number of accidents followed closely by the morning rush (7AM to 8AM) and then the noon hour. The three most noted probable factors for accidents include motorists proceeding without proper clearance, driving too fast, and some physical impairment of the driver. These factors can be used by local police to enhance targeted traffic patrol.

C. REGIONAL TRAFFIC PATTERNS

Comparison of the Township's 1998 and 2007 average daily traffic volumes (ADT) provides some insight into the Township's role as a destination and/or thoroughfare.

First, clearly the Carlisle Pike (PA Route 94) conveys the greatest traffic within the Township. Although this corridor is generally tangential to the Township its congestion and access affect adjoining roads and land uses. The average daily traffic volumes along this corridor are in the upper reaches of an arterial road's intended capacity (25,000 ADT) according to PennDOT County's standards. Fortunately Carlisle Pike is programmed for cartway widening to two travel lanes in either direction by the year 2010 according to the Adams County Transportation Improvement Plan.

Interestingly, the traffic has not increased substantially along Carlisle Pike as it passes through the short distance in the northeast corner of the Township. This suggests that the increased traffic associated with growth that has occurred within this artery's trafficshed is seeking alternative routes to disperse. This can suggest a high level of driver frustration.

Next the Hanover Pike (SR 0194) and Hanover Road (SR 0116) corridors are clearly serving motorists who commute through the Township on a daily basis. Over the last decade traffic has increased along the Hanover Pike by 40 percent and traffic along Hanover Road has increased by as much as 55 percent.

For many years the Township and County have discussed a means of improving east-west traffic flow between the Carlisle Pike through Conewago Township to serve municipalities to the west. The County has preliminarily identified conceptual corridors that pass through the Township for this purpose. While the Township acknowledges the need for improved east-west access, it does not want to sacrifice its rural landscape for this purpose that will principally serve motorists from other nearby municipalities. Local officials intend to keenly scrutinize any such "relief-route/bypass" alignment and design to ensure that its impact will not adversely affect the Township community development and preservation objectives.

Beyond this potential new relief route, the Township is actively engaged in local road improvements that will enhance the safety of motorists along these busy regional corridors as described below.

D. PROGRAMMED TRANSPORTATION IMPROVEMENTS

The Township has an ongoing program of road improvement and maintenance. It averages about \$100,000 in liquid fuels revenues from the State which it roughly allocates as follows:

- 20% vehicles and maintenance equipment;
- 50% urban road resurfacing projects; and,
- 30% rural road improvements and projects.

The Township staff considers their road maintenance efforts to be functioning well with sound equipment and buildings and adequate materials. In addition, the Township budgets \$10,000 annually for capital roadwork.

Rather than implement a costly Transportation Impact Fee Program the Township has begun to negotiate with prospective developers for contributions to effect several needed traffic signal improvements at key intersections with a high rate of traffic accidents. Specifically several recent developments have agreed to contribute \$85 - \$100 per dwelling unit for these improvements.

The first intersection is that of Hanover Pike (SR 0194), Mount Pleasant Road and Narrow Drive. This intersection is in the final design phase of preliminary work and is expected to be installed in the near future.

A second intersection for which funds have been escrowed to signalize is located at Hanover Road (SR 0116) and Sunday Drive and Hostetter Road. Here the Township has collected about \$60,000 for this project which will occur, once sufficient funds have been collected.

The Township recently closed Lovers Drive and Shriver School Road. These closings were aimed at reducing numerous traffic accidents and eliminating cut-through traffic. With these closings the Township is in the process of removing two unnecessary stop signs at the intersection of Lovers and Narrow Drives and Sheppard Road. In addition, the Township must obtain a Highway Occupancy Permit from PENNDOT for those properties that front along Lovers Drive and will now enter onto Narrow Drive at the intersection with the private lane that was formerly Lovers Drive. Work on these tasks is imminent.

Another possible road project identified by the Township staff includes the possible extension of Ram Drive to intersect with Mount Pleasant Road. This short extension would facilitate a more direct route for industrial traffic to the established industrial areas straddling Blettner Avenue within the Township and Hanover Borough. ***The Township would like to have this road extension constructed by developers and the Future Land Use Plan should seek to rezone land in this vicinity to accommodate this project.***

The Township expects to resurface Benn, Squire and Loot Alleys within the Village of Midway in 2008 with an estimated cost of \$80,000. It is also working with PENNDOT to facilitate drainage and curb and sidewalk improvements along Third Street in 2008 with an estimated cost of \$50,000. Annual roadway maintenance priorities are determined using the Distress Survey provided by LTAP subject to available funding.

On a more regional basis, the Adams County's Long Range Transportation Plan contains the 12-Year Program and is developed under the PA Transportation Act of 1970. The 12-Year Program suggests the County's major capital highway, bridge, transit, air, rail and transportation-related projects to be implemented by PENNDOT. The 12-Year Program is divided into three 4-year periods according to priority and funding availability.

The current 2007-2010 Program identifies a Carlisle Pike (SR 0094) road widening project as the only project within Conewago Township. Some \$3,450,000 have been reserved for the final design, utility right-of-way and alignment work, road right-of-way acquisition and construction. This project will widen the right-of-way and add one travel lane in each direction.

E. RAILROAD ACCESS

The CSX Corporation operates an active freight line that passes through Conewago Township from Hanover Borough at Kindig Lane in a northwesterly direction generally paralleling the Carlisle Pike. This line provides no rail sidings within Conewago Township at this time.



In addition, there is an inactive Genesee Wyoming line that approaches Conewago Township in the vicinity of Blettner Avenue. This line was formerly owned by Penn Central Railroad and was abandoned within Conewago Township when that company went out of business. At that time the right-of-way within York County was acquired by Genesee Wyoming.

F. PEDESTRIAN AND BICYCLE MOBILITY

HANOVER / GETTYSBURG CONNECTOR

The York County Rail Trail Authority and Healthy Adams County Bicycle / Pedestrian Corporation (ABPI) have partnered to do a bicycle/pedestrian off road trail feasibility study from Hanover to Gettysburg. Both organizations received funding from PA Department of Economic Development and PA Department of Conservation and Natural Resources to do the feasibility study which will be completed in the near future. This segment will be a part of the larger Grand History Loop Trail. Further, this connector will offer welcomed relief to local commuters who wish to ride their bicycles to Hanover or Gettysburg for work, school or leisure. The trail will offer bicycling, walking, jogging, cross country skiing and horseback riding. According to Tomas Jolin of ABPI, this study will identify conceptual alignments upon which gradual and specific actions can develop. ABPI would welcome any assistance from any public and/or private organization towards implementing this project.



Within Conewago Township, this proposed trail follows the abandoned former Penn Central railroad right-of-way that enters the Township at the Hanover Borough Water Department Plant and runs across Hanover Shoe Company property in a northeasterly direction towards Hanover Borough. **Local Officials should await the final recommendations of the trail feasibility study and then partner with the York County Rail Trail Authority and Healthy Adams County Bicycle / Pedestrian Corporation in seeking a State grant for trail easement acquisition and design.** The Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Recreational Trails Program Grants, provide funds to develop and maintain recreational trails and trail-related facilities for motorized and non-motorized recreational trail use. Match requirements are 80% grant money, up to a maximum of \$100,000, and 20% project applicant money. Acquisition projects require a 50/50 match. Funding is provided through the Federal Highway Administration and the Transportation Equity Act for the 21st Century (TEA-21). (www.dcnr.state.pa.us)



The proposed alignment is reflected on the Transportation Map and is also depicted as one of the potential linear parks on the Public Facilities Map contained within Chapter VII of this Plan.

Conewago Township should target select new neighborhoods for pedestrian friendly streetscape designs with narrower cartways, on-street parking, traffic calming devices and slow posted speed limits in those instances when they compliment a more compact residential development form and/or when new developments are proposed that adjoin existing developments (usually older neighborhoods) that have sidewalks in place.

The Township should also attempt to link key public facilities (schools, parks and playgrounds, shopping areas, etc.) with a collector sidewalk system. In this case these sidewalks will often follow State-owned roads and the Township will need to seek opportunities for public improvement projects. The Township should seek to utilize a variety of techniques for this purpose such as developer exactions or donations for deferred road improvements, block grants, growing greener grants, customary transportation grants and even mandatory dedication fees-in-lieu of open space (assuming the Township identifies key sidewalks as part of its linear park system.) In some cases, cross-country trails and paths can provide the same pedestrian linkages and/or offer key interconnects with established sidewalk networks. Some municipalities are beginning to earmark mandatory dedication fees-in-lieu for target linear park projects.

G. MASS TRANSIT

There is no fixed route bus service into Conewago Township or Adams County. The Adams County Transit Authority (ACTA) operates a para-transit fleet of 18 wheelchair buses that offer demand responsive curb-to-curb transport of registered users throughout Adams County. Buses generally run between 6:00 A.M. and 6:00 P.M. Monday through Friday.

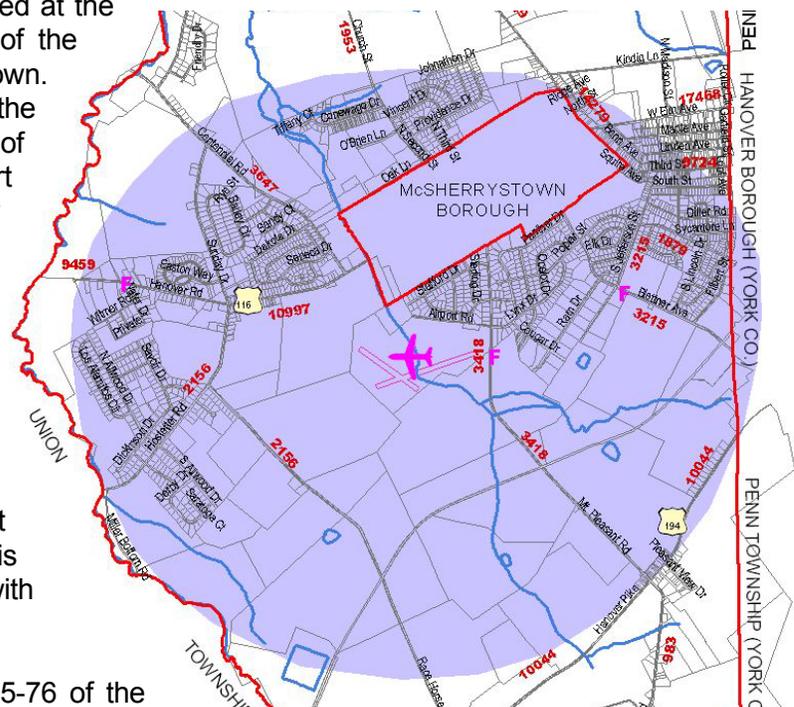
Senior, disabled and low-income citizens can register with ACTA who will identify funding sources to subsidize fares. For example seniors can often ride for free between their homes and the grocery store, doctor's office or senior citizen centers through grants offered by the York County Office of the Aging and Pennsylvania Lottery. Other programs are also available and the ACTA will assist riders with respective applications and grant requests.

The service is open to the general public but the vast majority of riders qualify for subsidized fares. Unsubsidized one-way fares between Conewago Township and Gettysburg cost \$11.00. ACTA also offers service to Harrisburg, Carlisle, Lancaster, Lebanon (VA Hospital) and York on Wednesday mornings. Persons interested in registering with ACTA can call or visit their office at:

Adams County Transit Authority
Address: Rear 257 North Fourth Street
 Gettysburg, PA 17325
Phone 1: (717)337-1345
Phone 2: (800)830-6473
Fax: (717)337-2568

H. AIRPORT SAFETY

The Hanover Airport is located at the end of Airport Road south of the Borough of McSherrystown. According to the Commonwealth of Pennsylvania Airport Directory, this facility includes a 100 by 2550-foot grass runway. The site is attended at irregular hours. The facility offers an administration building, restrooms, taxi service a courtesy car and a telephone. There are no commercial airlines that operate at this facility and this is a visual landing runway with no navigational aids or lights.



Sections 155-71 through 155-76 of the Zoning Ordinance specifically regulates the height of structures and vegetation so as to protect the Airport Clear Zones according to prescribed standards and methods. An approximate delineation of the Airport Clear Zone is depicted above and upon the Transportation Map.

The Township might also wish to use the existence of this facility to support a zoning approach that would limit airport construction within the Township. Often rural residents

object to airports over concerns that noise from an aircraft taking-off and landing adversely affects nearby residents and livestock. Accordingly, the Township Supervisors could restrict the location of airports, new landing strips and helipads so as not to avail the expansive area of the Township.

Instead, it could confine an Airport Overlay Zone around the Airport Clear Zone for the Hanover Airport. In this manner future aviation uses within the Township will be confined to an area that is already subject to such use; this area has been depicted on the Transportation Map. It is recommended that the zoning ordinance rely upon a conditional use review process for such uses so that additional public testimony can be taken and considered before approving such a use. The criteria for this conditional use should be developed to ensure that the facility is located and operated to minimize adverse impact to nearby residents and farmers.

X. Future Land Use

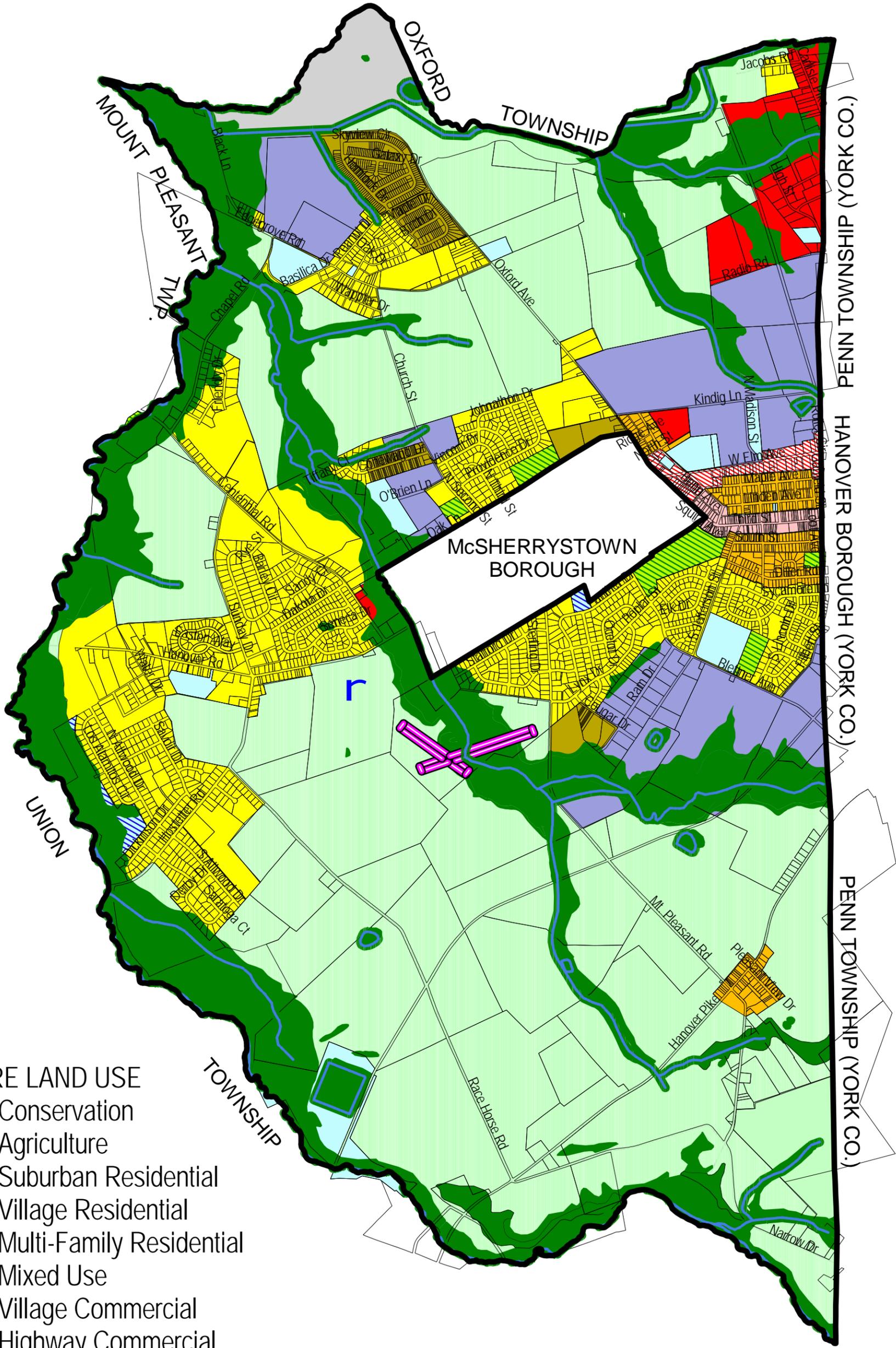
One element important to the comprehensive planning process is the charting of appropriate future land uses and growth areas. This effort embodies all of the background information collected regarding natural features, public facilities and utilities, existing land use, population studies, and traffic patterns. Then, these resources are allocated in a manner that responds to the Township's desires, as expressed in the Community Planning Goals in Chapter II. ***What results is a future land use map that should be used to adjust zoning boundaries, and help properly locate future municipal investments, so as to maximize their efficiency. This chapter should be used in conjunction with the Future Land Use Map. Also, the Future Land Use Plan can guide and justify decision making regarding all sorts of other municipal activities and functions (e.g. grant applications, utility and infrastructure planning, public improvements and investments, etc.)***

The preparation of the Future Land Use Map was accomplished according to several "ground rules"; an understanding of these "ground rules" will lead to a better understanding of the Plan's recommendations.

First, this Plan is designed to address future conditions until the year 2020. Accordingly, future growth areas have been generally located and sized to accommodate the growth that is projected during this time frame. This results in a "staged" future land use scheme that (1) reduces the conversion of productive farmlands and sensitive natural features, (2) confines development areas so that public improvements and services can be provided efficiently to a compact area, and (3) predominately focuses infill development around existing settlements. ***The benefits of this approach are significant, but require that the municipalities commit to the Plan's updating on or before the year 2020.***

Second, local officials are keenly aware that Adams County has been interested in improving east-west traffic flow between the Carlisle Pike through Conewago Township to serve municipalities to the west. The County has preliminarily identified a conceptual corridor that passes through the Township as part of its Official Comprehensive Plan. While the Township acknowledges the need for improved east-west access, it does not want to sacrifice its rural landscape for this purpose that will principally serve motorists from other nearby municipalities. The future land use scheme assumes that any new road would be aligned and designed to conform to the Township's community development and preservation objectives.

Third, a great deal of emphasis was placed on existing land uses in developed areas. In some limited cases, existing development types were recommended for changes to another land use category to enhance compatibility. In rare instances, existing uses were not reflected to suggest the need for change within that given locale toward which regulatory efforts can strive. Similarly, isolated land uses (particularly scattered businesses) within the rural landscape are not identified. This helps to convey the Plan's overall approach towards targeted growth in designated growth areas and conservation of outlying natural features and farms. Furthermore, this document deals with future land use on a property-by-property basis; however, in rural settings individual home sites upon farms are not reflected as they



FUTURE LAND USE

- Conservation
- Agriculture
- Suburban Residential
- Village Residential
- Multi-Family Residential
- Mixed Use
- Village Commercial
- Highway Commercial
- Industrial
- Public
- Quarry
- Private Park
- Public Park
- Airport
- PROPOSED PARK & FIRE HOUSE



Conewago Township

Adams County, PA



are considered a part of the farming principal use. Overall, this emphasis on existing land use will keep the Plan practical and should make it more useful to local officials in their evaluation of future land use decisions.

Fourth, based upon goals to concentrate development around the “edges of town and villages” and where public utilities can be provided, much of the designated future growth is located within close proximity of existing Boroughs and Villages with available utility lines. Specifically, the Plan attempts to distinguish between “town” areas in which planned growth will be served by public utilities and services, and the “country” where agricultural preservation and the conservation of natural features is the priority along with protection of a rural independent lifestyle.

Fifth, another important goal that strongly influences the future land use pattern relates to local business promotion. Local officials hope to promote local business ownership and operation, offer locally-based employment and generate local tax revenues. Therefore, the Plan proposes commercial and industrial nodes at logical locations that are sized, configured and located to promote such uses that are “home-grown” and won’t threaten other local economies.

Finally, this Comprehensive Plan will only be effective if it is implemented. While there are numerous recommendations made throughout the Plan that do not require new regulations, land use protection will ultimately demand revised zoning and subdivision and land development ordinances. Conewago Township should quickly and firmly align its development policies and practices to reflect the recommendations within this Plan in accordance with Section 303.(d) of the Municipalities Planning Code.

A. AGRICULTURE

Throughout history, agriculture, which includes forestry, has played a primary role within Pennsylvania, Adams County and the Township; today, this is still true as evidenced in Chapter V (Existing Land Use). As the Soils and Geology Map contained within Chapter III (Natural & Cultural Features) of this Plan



reveals, a generous amount of prime agricultural soils extend throughout the Township.

These fertile areas have a characteristically flat to gently rolling landform. These areas contain the highest concentrations of farms that are part of the designated Township’s Agricultural Security Areas (ASA). Although some parcelization and development has occurred here in the past, a suitable critical mass of this landscape is still devoted to agricultural operations. These resources are being put to good use by the Township’s farmers who have largely embraced the need to preserve their farms as evidenced by their voluntary participation in the Township’s ASA.

In planning for agricultural land, the Township should adopt a philosophy and policy not to consider agricultural land as “undeveloped farmland awaiting another use.” Rather it should be viewed as “developed land” that is being used to produce a valuable product. Farming is a land-intensive, manufacturing process that converts raw materials into a product, comparable to other industrial operations, with occasional accompanying impacts of noise, odor and dust. Therefore, this plan advocates a position that this agricultural area not be considered as a holding zone, but as an area having a positive purpose of utilizing the Township's natural and non-renewable resources for the benefit of the entire community and beyond. ***This agricultural area should be protected by zoning regulations that prevent interference by incompatible uses which weaken the ability to conduct normal farming practices. Permitted residential densities should be kept very low with small maximum permitted lot sizes. Many municipalities employ a fixed ratio that allows one new dwelling unit for each 20, 25 and even 50 acres of farmland. Such new dwellings can only occupy one to two acres each unless they consume non-productive areas.*** In this manner, local farming is preserved and unsuspecting future residents are spared the sometimes intensive impacts associated with agricultural operations.

Traditionally, farming has involved the growing of crops for either sale off of the farm or for consumption by animals on the farm with the subsequent marketing of either meat or milk. Thus, the viability of the farming operation was very much tied to the productivity of the land. Recent years have seen the advent of concentrated animal feeding operations (CAFOs). These involve the concentration of large numbers of cows, hogs or poultry on a single tract of land with the feed being bought off-site. Because the food these animals eat is often not grown on the tract of land where they are housed, very high animal concentrations can be achieved. These highly concentrated operations often create acute odor impacts on neighboring residents. These odors can arise from the animals themselves, but more often from their waste products, both at the site where produced and where they are land-applied. Agricultural zoning ordinances enacted by a municipality should be consistent with, but cannot be more restrictive than PA Act 38 of 2005 (House Bill 1646) Agriculture Communities and Rural Environment (ACRE), or any legislation superseding PA Act 38 of 2005.



Past absent or lenient zoning policies have enabled the development of numerous rural homes are stripped-out along the roads within the agricultural landscape. ***Nonetheless these homes exist and future zoning regulations should specifically permit them as permitted uses within this area.*** In so doing the homes avoid the classification as nonconforming uses. This will enable residents to make logical adjustments to these lots/homes without the need to gain approval from a local zoning hearing board for variances or expansions to nonconforming uses. ***However, future residential lots within the Agricultural area should require careful design and layout so that such residences minimize common property lines with active farming operations.*** The use of rural clusters where several homes share unified street access and minimize borders with adjoining farms improve compatibility.

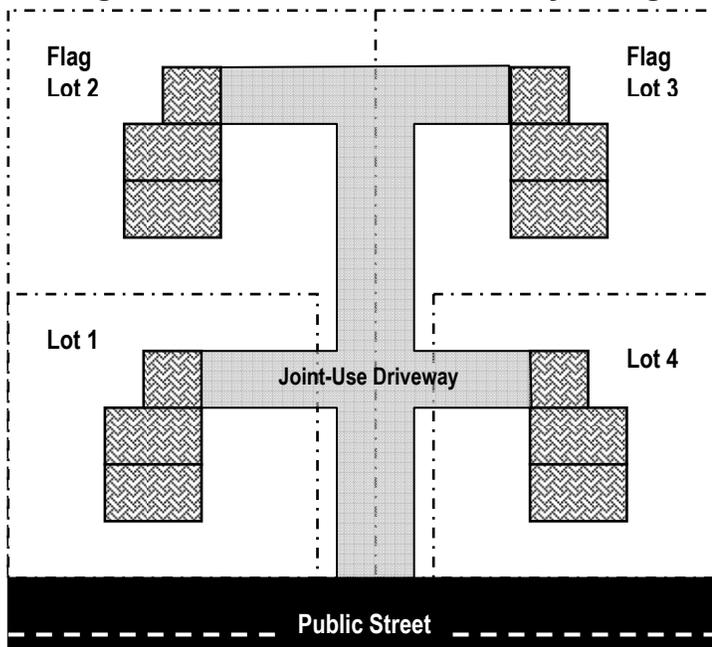
Next, uses within this area will rely upon on-lot sewage disposal systems (OLDSs). On-lot disposal systems, if constructed and maintained properly, can provide a reliable and efficient means of wastewater treatment in rural and suburban areas where population density is low. However, where such systems are improperly installed or not maintained, contamination of on-site water supplies can result.

Therefore, it is recommended that the Township continue to implement its OLDS management program. Such program requires the routine maintenance of systems to include the “pumping-out” of subsurface septic tanks on a regular cycle. The extension of public sewers across the countryside is an expensive proposition which usually falls to local government when malfunctioning systems occur and then injects pressure to rezone and develop amid the rural landscape. An OLDS management program is preventive maintenance that avoids costly public investments that only serve a few residents. This should be an important component of any updates and / or new Act 537 Plans, as they occur.

Along the same lines, zoning regulations should require new lots to provide a primary disposal site and another replacement disposal site to be approved by the Township SEO. Furthermore, the Township Zoning Ordinance should also require that any permit issued for a new use that would rely upon a new OLDS, specifically depict and protect the alternate disposal site from disturbance.

Flexible design standards should be used to enable efficient lotting of new homes amid prime farmlands and natural features. Many municipalities provide for the use of flag lots in rural areas for this purpose. In addition, limited use of joint use driveways can prevent the inefficient and unattractive strip housing pattern along the Township’s rural roads. **However, the use of flag lots and joint use driveways should be tied to a proposed development that seeks to avoid disruption of important natural features and productive farmlands.**

Flag Lots with Joint-Use Driveway Design



As an alternative to freestanding lots with separate on-lot utilities, the Township could also permit the use of conservation design subdivisions that employ low-tech community based utility systems. Here greater density can accommodate the few homes on less acreage and avoid disruption of adjoining farming operations. This will require greater administrative effort and more advanced zoning techniques, but this option is useful in blending farming with rural neighborhoods. It is important to note; however, that local officials should always be mindful that the primary purpose of this land use category is to accommodate active farming and the more homes that are placed within the midst of agriculture, the more

opportunity for conflicts will increase. Conservation design neighborhoods should incorporate design standards that locate and use the “required” open space to buffer the homes from impacts associated with normal farming practices.

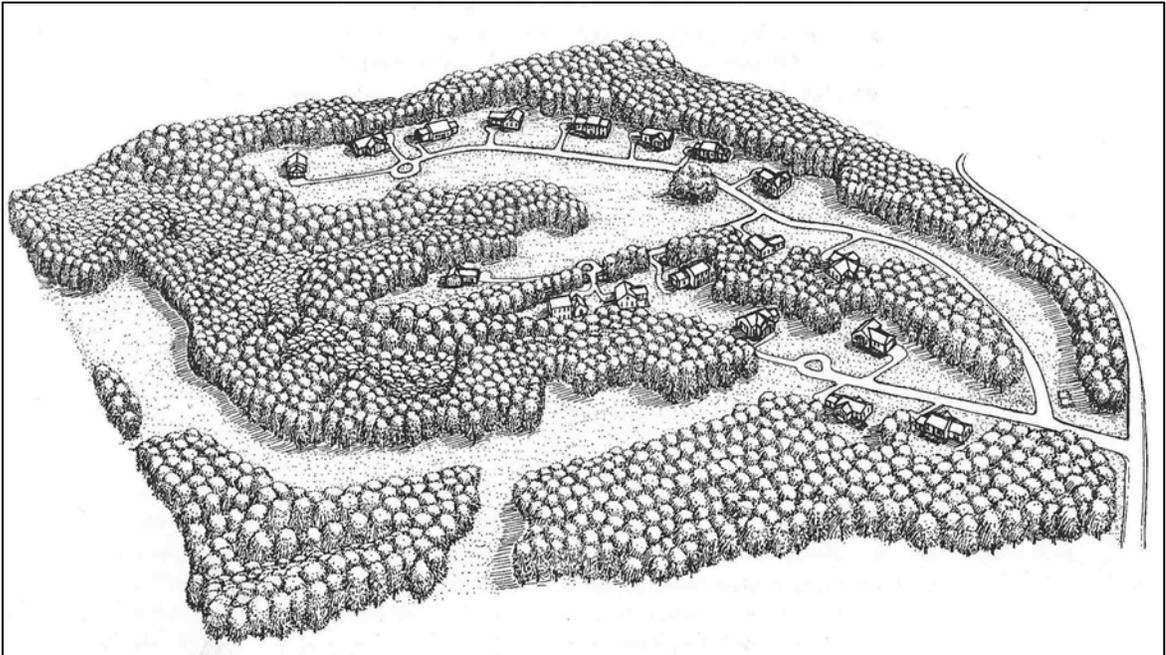


Image Source: Growing Greener, Natural Lands Trust, Inc., PA Dept. of Conservation & Natural Resources, Pennsylvania State University Cooperative Extension Service, April, 1997. Cover.

Next, the use of accessory businesses should be permitted within the Agricultural Zone to offer close-to-home employment and promote local rural-based tourism.

Home occupations should be confined to uses that can be adequately conducted from within the dwelling unit itself with limited non-resident employees; these uses can be permitted by right. Rural occupations expand on the home occupation concept and enable other more intensive uses that can make efficient use of rural outbuildings and outdoor storage. Here impacts of noise, light, traffic, dust, hours, screening and odor



Farm stands and accessory businesses are valuable features in an agricultural setting. Image Source – Chester County Plan. Comm.

should be scrutinized prior to approval to ensure that adjoining properties are not adversely affected. Farm occupations (e.g. accessory businesses, auxiliary enterprises, etc.) should be encouraged to financially assist active farming operations and can be conducted in barns. Here local residents from the site and its neighborhood can engage in non-farm activities provided the impacts are contained upon the site and the operator continues to farm. In all cases (home, rural and farm occupations) the applicant should demonstrate safe means of waste disposal that does not threaten the environment.

Beyond the “accessory occupations” described above that are associated with another principal use, some rural communities also permit freestanding farm-related businesses as principal uses. These are usually tied to offering some service or goods used by local farmers with up-set size limitations so that proper local scale is achieved. Farm equipment dealers, seed and fertilizer distributors, blacksmiths and buggy shops, dry goods stores are examples of suitable farm-related businesses. Land owners expanding their businesses as their principal source of revenue, may be subject to Clean and Green penalties because the business changes the land use from agriculture to commercial.

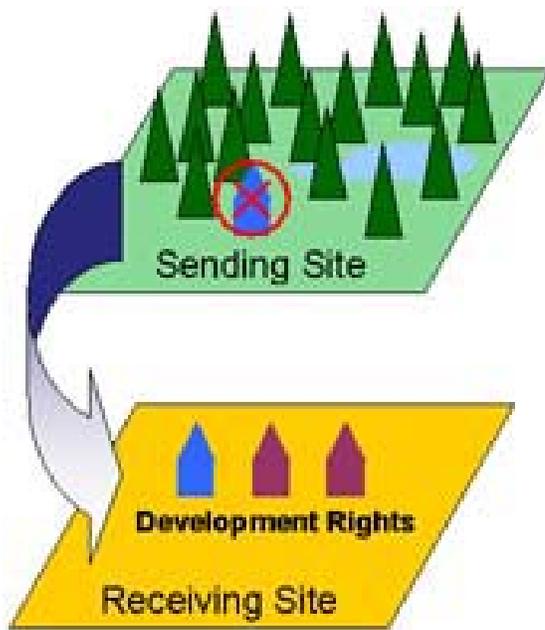
Because of its rural character, the Township should locate certain uses (e.g. golf courses, airports, campgrounds, shooting ranges, and etc.) within this area to offer suitable opportunity for such uses and separate impacts from more densely developed settings. Some of these should require conditional use approval to ensure that they are located, designed and operated in a manner that is compatible within the rural setting.

Although an effective agricultural zoning ordinance can help preserve farmlands in the short run, certain legal principles on accommodating growth can threaten their long-term integrity. Therefore ***the Township should support efforts of the County’s Agricultural Land Preservation Board conservation easement program, the Land Conservancy of Adams County and the Township’s Agricultural Security Area programs.*** Certainly easement funds are limited and all prime lands cannot be purchased immediately. Therefore, local officials should commit to the preservation of farmlands through zoning until easements can be purchased through this program.

Also, it may be beneficial to consider the implementation a transfer of development rights (TDR) program to financially compensate farmers in lieu of residential development; although this may lead to increased development potential in localized areas of the Township where the development rights would be used to increase development density.

One of the nation’s most pressing environmental and economic dilemmas involves the preservation of natural areas and farmlands that often results in a perceived financial loss of affected property owners. Across the country, many farmers and large landowners consider their property as their total sum of wealth and “retirement fund.” They expect the opportunity to sell their properties for development purposes at the end of their career or pass along this wealth to the next generation of their family. This causes resistance to the adoption of stricter land use controls needed to preserve farmlands and natural areas by severely restricting future residential development. To overcome this problem, the legislature amended the MPC to specifically authorize the use transferable development rights (TDR).

The use of TDR enables farmers/landowners to sell the development rights of their properties to developers or other parties, yet retain the ability to farm or otherwise make use of their properties for non-development purposes. In turn, developers apply the TDR acquired from the farm elsewhere; hence, the “transfer of development rights.”



TDR is a program that presents no risk to the farmer/landowner. Essentially, the municipality assigns a number of “development rights” which are generally tied to the sizes of farms/lands (e.g., one TDR per five acres of land) within the area to be preserved. This area is called the “sending area” as TDR’s are “sent” from it. Within the Township, the sending areas could be the Agricultural Zone.

Next, the municipality identifies an area or areas within which developers can use their acquired TDR’s to increase the intensity of permitted development. This area is called the “receiving area,” as TDR’s are “received” into it. Within the Township, the receiving areas could be the residential, commercial and/or industrial zones.

Again, it is important to state that a TDR program costs the original farmer/landowner nothing. He/she simply is given TDR’s that he/she can keep and/or sell. Any sale prices of individual TDR’s are determined between the farmer/landowner and the buyer, and given the land values within the Township these should reach thousands of dollars per TDR. Once a farmer/landowner sells all of his/her TDR’s, no additional residential development can occur on the farm.

TDR provides a means of financially compensating landowners within agricultural/conservation settings who are willing to preserve their properties. TDR also enables these landowners to share in the wealth created by growth and development within the municipality, at no risk. ***To implement the TDR program the Township will need to conduct a detailed analysis of both the sending and receiving areas, as well as develop the ordinance and methods to administer this program; these efforts will require considerable expense, time and commitment but will yield the potential for many acres of permanently preserved open space at no cost to the Township.***

Most municipalities with TDR programs use their residential zones as receiving areas. ***To make effective use of these zones the Township should ensure that the base permitted density has “room” so that there are real incentives for the acquisition of TDRs. Then the Township can offer density bonuses for the use of TDRs exceeding the original density subject to compliance with all applicable design standards.*** It is important that the Township not deprive the residential landowner reasonable use of his/her property absent the use of TDRs; however, it is equally important that the Township keep base densities sufficiently low to encourage TDR usage. It is also vital that the Township provide sufficient acreage for potential residential development to satisfy its legal fair-share of growth and development. ***Final permitted densities with the application of TDRs should also be consistent with affected infrastructure capacities and prevailing neighborhood densities so that compatibility is assured.***



Image Source - www.nj.gov/dca/osg/resources/tdr/index.shtml

While most municipalities rely upon their residential development to drive their TDR programs, some have begun to identify receiving areas for nonresidential developments. Because the land values of commercial and industrial sites are generally significantly higher than residential development sites, there is greater potential for the purchase of TDRs when applied to commercial/industrial development sites. Within these Zones, regulations should limit permitted lot coverage at some base level (say fifty-percent) beyond which additional coverage can be obtained via the acquisition and assignment of TDR's from the sending area. Then for each TDR applied, the lot coverage can be increased by a prescribed size (say 2000 square feet) up to the maximum permitted lot coverage of say 70 percent. Again, the Township must not deprive the nonresidential landowner reasonable use of his/her property absent the use of TDRs, but the base lot coverages should be set low enough to offer real incentives for TDR usage. It is also vital that the Township provide sufficient acreage for potential commercial/industrial development to satisfy its legal fair-share of growth and development. **Finally, permitted coverages with the TDRs should be consistent with affected infrastructure capacities and reflect community development objectives for these areas.**

Usually TDRs are purchased by developers from farmers/landowners, but nothing prevents others from purchasing development rights. In one instance, a municipality contemplated conducting an annual reverse-auction for the purchase of development rights. This auction would provide a convenient mechanism at which developers and others could join with farmers to transact TDR transfers. **Local and county government agencies can also acquire development rights for their ultimate retirement and/or their resale to developers at a profit. This creates an opportunity for conservation-oriented groups to preserve resources and generate funds for a revolving program of purchase and resale of TDRs. The Township, too could act as a middle-man in this process. Then, the developers could access one centralized bank from which to acquire needed development rights.** This is but one example of the creativity that can be applied in the development process to preserve natural resources yet enable managed growth and development.

The Agricultural category includes large areas within the Township that drain directly into the Conewago and Plum Creeks. Historically, intensive agricultural production has created surface water degradation due to erosion and the application of fertilizers. The Agriculture Communities and Rural Environmental (ACRE) Initiative, PA Act 38 of 2005, provides the regulatory framework for nutrient management and non-point source pollution abatement ***Local officials should work with the Adams County Conservation District and employ a variety of techniques that encourage farmers to install riparian buffers along the creek and its tributaries.***

Local officials should also consider a riparian buffer ordinance in those areas where water quality is, or could be, significantly degraded by agricultural operations and urban development. Then compliance should be required whenever a zoning permit is needed. Tax assessment officials should be required to reduce assessed values of agricultural lands within riparian buffers.

Farmers should also be educated about the various state and federal conservation programs and income tax deductions that are made available to property owners who place conservation easements upon their properties for riparian buffers. Local watershed groups, local officials, and County, State and Federal agencies should partner with landowners to improve surface water quality using best management practices.



Photo of creek with and without a riparian buffer through farmland.
Image source: York County Planning Commission.

A sample riparian buffer ordinance is presented on page 132 of this Chapter and additional discussion can be found on pages 72-75 of this Plan.

To manage these issues, it is recommended that a new effective Agricultural Zone be applied to this area with the following components:

- 1. A deliberately worded purpose statement that cites the valid public purpose to protect and preserve prime agricultural soils and valuable farming operations in compliance with Section 604.(3) of the Municipalities Planning Code;***
- 2. An unobtrusive regulatory approach to farms conducting normal farming operations;***
- 3. A fixed ratio of permitted residential density, for all agricultural lands, determined by local officials, that restricts development potential;***
- 4. A minimum and maximum lot area of 1 and 2 acres, respectively, for non-farm uses;***
- 5. Liberal accessory use regulations that specifically include farm occupations, roadside stands and other rural pursuits, and freestanding farm-related businesses provided that these uses have little impact and that adequate provision is made for the safe disposal of wastes;***

6. ***Siting standards for future dwelling units proposed that protect sunlight easements/equipment turning radii onto adjoining farms and locate homes so as to minimize land use conflict;***
7. ***Language that specifically authorizes pre-existing homes as permitted uses;***
8. ***An Agricultural Nuisance Disclaimer that informs prospective residents of the potential impacts associated with normal farming practices that are protected under the PA Right to Farm Law and the PA Agricultural Security Law and Agriculture Communities and Rural Environment (ACRE), PA Act 38 of 2005;***
9. ***Alternate OLDs protection and maintenance and the possible use of conservation design with community systems;***
10. ***Siting of certain large-scale land uses separated from residential areas;***
11. ***Identification of the Agricultural Zone as a sending area for transferable development rights (TDRs); and,***
12. ***A riparian buffer requirement to protect surface water quality.***

B. CONSERVATION

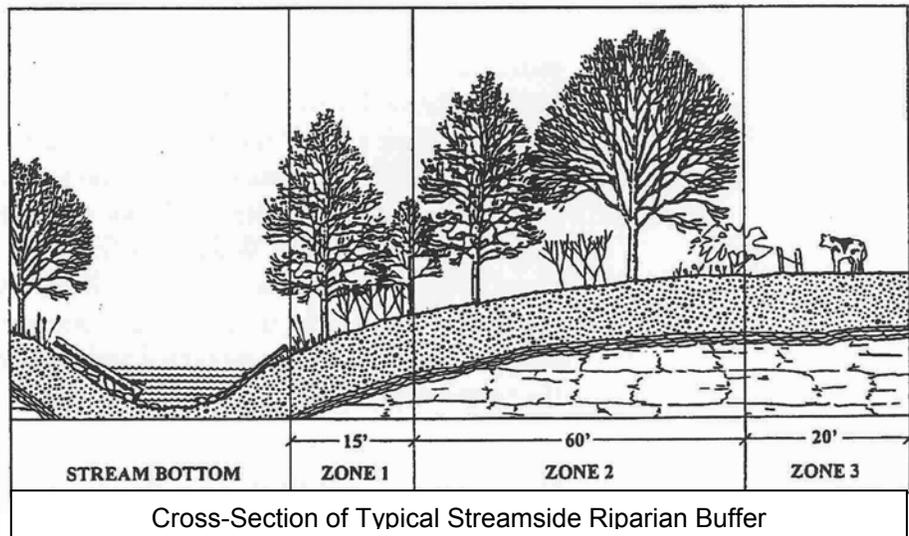
Conewago Township has a landscape that is relatively devoid of large areas of environmental sensitivity. Because of its carbonate geology, the resulting landform is largely tillable and developable with proper care. Accordingly, the Township's Conservation Zones are confined to floodplains, wetlands woodlands and slopes along the Townships sparse watercourses. Nonetheless, these features offer scenic beauty, natural habitats and passive recreation opportunities that are foremost in the minds of many local officials and residents. All of these features form the basis for the assignment of the Conservation Zone. In addition, they offer some general perspective on the presence of conditions with a given locale. However, the specific location and extent of these features will require more detailed refinement and analysis during preliminary plan review of the subdivision process.

Consequently, applicable subdivision and land development regulations should require the preparation of an environmental impact report as a prerequisite to subdivision of new lots. This report should require an applicant to identify important natural features on the site and keep proposed development activities away or manage impacts within acceptable levels. Prospective developers should be required to demonstrate that their proposed use engaged a proper site planning process to identify, protect and maintain important natural features during and after site construction. This will require considerable work on the part of an applicant and the Township but will ensure that proposed developments are designed to respect the Township's valuable natural features. ***Since this Zone contains the largest areas of woodland, specific requirements should be imposed upon forestry and logging operations in accordance with recent changes to the Municipalities Planning Code. Such regulations should ensure that a suitable timber harvesting plan complies with required conservation laws and practices.*** A recent amendment to the MPC requires that forestry uses be permitted by right within every zone of every municipality within the Commonwealth. Since forestry uses typically occur within conservation settings this discussion is presented here; however, ***the Township must permit forestry uses in each of its zones.*** At about the same time the MPC was amended to require forestry uses, the Pennsylvania State Township Association of Supervisors (PSATS), Pennsylvania State University (PSU) and PA Department of Conservation and Natural Resources (PA DCNR) prepared a model ordinance to help regulate and monitor forestry operations. ***An updated and revised copy of this model***

ordinance that has been reviewed by various County Conservation Districts is contained on page 131 which should be applied throughout the Township.

As described above the Conservation Zone depicted on the Future Land Use Map, includes FEMA Floodplains, alluvial soils, US Department of Interior Wetlands and Riparian Buffers have been overlain upon the Township. While protection of floodplains and wetlands are widely accepted land use management techniques, recent awareness of diminishing surface water quality suggests the need for more protection for surface water. Because many of the Township's streams have been identified as "Impaired Waters" (see pages 24-25 of this Plan) the Township should initiate a program to improve surface water quality.

Studies conducted by the U.S. Forest Service demonstrate that 60-to-95-foot wide riparian buffers offer real advantages in the removal of harmful nutrients and sediment from storm water before it enters the stream. These same



riparian buffers can increase the food supply and create interconnected natural systems of movement for local wildlife. Riparian buffers are areas adjoining streams where naturally successive vegetation is provided and protected. More information about this subject can be found on pages 72-75, and a model ordinance is contained on page 132 of this Chapter.

Local officials should adopt Riparian Buffer Overlay regulations and apply them throughout the Township.

SECTION 1 FORESTRY USES MODEL ORDINANCE

- A. **FORESTRY PERMITTED IN ALL DISTRICTS** - In accordance with State law, forestry (as defined herein) uses are permitted, by right, in every Zone, subject to the following standards:
- B. **TIMBER HARVESTING PLAN REQUIREMENTS** - Every landowner on whose land timber harvesting is to occur shall obtain a zoning permit, as required by this Ordinance. In applying for said permit, the applicant shall prepare and submit a written timber harvesting plan in the form specified below. No timber harvesting shall occur until a zoning permit has been issued. The provisions of the permit shall be followed throughout the operation. The timber harvesting plan shall be available at the harvest site at all times during the operation, and shall be provided to the Zoning Officer upon request. The landowner and the operator shall be jointly and severally responsible for complying with the terms of the timber harvesting plan and the zoning permit. All timber harvesting operations will be conducted only in accordance with this ordinance and the approved timber harvesting plan.
 - 1. A forest regeneration plan that identifies the principle species of trees intended to be logged and their respective method or methods of forest regeneration, including each species respective forest regeneration schedule (i.e. in terms of years.) As soon as practical and consistent with sound forest management practices, after the conclusion of the timber harvesting operation, the applicant(s)/owner(s) shall cause to be implemented the forest regeneration schedule of the timber harvesting plan.
 - 2. **Site Plan** - Each timber harvesting plan shall include a scaled drawing containing the following information:
 - A. Site location and boundaries, including both the boundaries of the property on which the timber harvest will take place, and the boundaries of the proposed harvest area within that property;
 - B. Significant topographic features related to potential environmental problems and all of the natural and cultural features required within this Article 5 of this Ordinance;
 - C. Location of all earth disturbance activities, such as roads, landings and water control measures and structures;
 - D. Location of all crossings of waters of the Commonwealth; and,
 - E. The general location of the proposed operation to municipal and State highways, including any accesses to those highways.
 - 3. **Compliance With State Law** - The timber harvesting plan shall address and comply with the requirements of all applicable State regulations, including, but not limited to, the following:
 - A. Erosion and sedimentation control regulations contained in Title 25 Pennsylvania Code, Chapter 102, promulgated pursuant to The Clean Streams Law (35 P.S. §691.1. et seq.); and,
 - B. Stream crossing and wetlands protection regulations contained in Title 25 Pennsylvania Code, Chapter 105, promulgated pursuant to the Dam Safety and Encroachments Act (32 P.S. §693.1 et seq.).
 - 4. **Relationship of State Laws, Regulations and Permits to the Timber Harvesting Plan** - Any permits required by State laws and regulations shall be attached to and become part of the timber harvesting plan. An erosion and sedimentation pollution control plan that satisfies the requirements of Title 25 Pennsylvania Code, Chapter 102, shall also satisfy the requirements for the timber harvesting plan and associated maps specified in Sections 1.B.1. and 1.B.2., provided that all information required by these sections is included or attached.
 - 5. **Required Marking of Trees** - Before any permitted timber harvesting operation begins, all trees that are at least six (6) inches in diameter as measured four and one-half feet (4.5') above grade to be felled in connection therewith shall be clearly marked on the trunk and the stump so that the same may be easily identified both before and after a tree has been felled. No tree shall be felled which has not been designated for removal on the approved timber harvesting plan.

C. REQUIRED NOTIFICATIONS

- 1. The holder of a permit to conduct a timber harvesting operation shall notify the Township in writing at least forty-eight (48) hours before any cutting of trees is to begin including, but not limited to, those in connection with the construction of roads or trails. Such notification shall also indicate an estimated completion date.
- 2. The holder of a permit to conduct a timber harvesting operation shall notify the Township in writing within forty-eight (48) hours of the completion date of the timber harvesting operation.

D. REQUIRED FOREST PRACTICES

- 1. The following requirements shall apply to all timber harvesting operations:
 - A. Timber harvesting shall be accomplished with those professionally-accepted silvicultural practices that are most appropriate to the particular timber stand as indicated in the approved timber harvest plan.
 - B. No treetops or slash shall be left within the fifty (50) feet of any public street, private roadway providing access to any adjoining residential property or Residential District, adjoining property or designated trail; or within ten (10) feet of any natural or artificial swale or drainage ditch. All tree tops and slash shall be lopped to a maximum height of four (4) feet above the ground.
 - C. Felling or skidding on or across property of others is prohibited without the express written consent of the owners of such property. No treetops or slash shall be left on or across the boundary of any property adjoining the operation without the consent of the owner thereof.
 - D. Littering is prohibited and litter resulting from a timber harvesting operation shall be removed from the site on a daily basis.
 - E. All cutting, removing, skidding and transporting of trees shall be planned and performed in such a manner as to minimize the disturbance of or damage to other trees and vegetation and the land itself, unless authorized in the approved timber harvesting plan.
 - F. Roads and trails shall be constructed, maintained and abandoned in such manner as to prevent soil erosion and permanent damage to soil and waterways.
 - G. Roads and trails shall be only wide enough to accommodate the type equipment used and grades shall be kept as low as possible.
 - H. Where possible, stream crossings shall be avoided, but where deemed to be necessary, crossings shall be made at a right angle across suitable culverts or bridges.
 - I. Skidding across live or intermittent streams is prohibited except over bridges or culverts.
 - J. Unless superseded by the Erosion and sedimentation control regulations contained in Title 25 Pennsylvania Code, Chapter 102, promulgated pursuant to The Clean Streams Law (35 P.S. §691.1. et seq.), "No Timber Harvesting Buffer Zones" are established in accordance with the following table. Except for the construction and use of roads and trails described in the approved timber harvesting plan, no trees shall be cut, removed, skidded or transported in a No Timber harvesting Buffer Zone.

No Timber Harvesting Buffer Zones	
Use	Required Minimum Setback
Adjoining street	50 feet
Adjoining property	50 feet
Streams or other watercourse	25 feet
Designated Trails	25 feet
Springs, vernal ponds, seeps, Natural or artificial swale or drainage ditches	25 feet

- K. Everything practicable shall be done to prevent damage or injury to young growth and trees not designated for cutting unless authorized within the approved timber harvesting plan.
 - L. All limbs and stubs shall be removed from felled trees prior to skidding.
 - M. All trees bent or held down by felled trees shall be released promptly.
 - N. No trees shall be left lodged in the process of felling with as little damage as possible to the remaining trees.
 - O. Felling or skidding on or across any public street is prohibited without the express written consent of the Township in the case of Township streets or the Pennsylvania Department of Transportation in the case of state Highways.
 - P. The stumps of all felled trees shall be permitted to remain for soil for stabilization provided that they extend no more than two feet (2') above grade.
 - Q. During the periods of abnormal forest fire danger, as determined by the Fire Chiefs Association of Conewago Township, the Township shall have the right to order a suspension of timber harvesting operations until the danger subsides.
 - R. Upon completion of a timber harvesting operation, all roads shall be graded to eliminate any wheel ruts, and access to such roads from any public street by motor vehicles of any kind shall be effectively blocked.
- E. **RESPONSIBILITY FOR ROAD MAINTENANCE AND REPAIR: ROAD BONDING** - Pursuant to Title 75 of the Pennsylvania Consolidated Statutes, Chapter 49; and Title 67 Pennsylvania Code, Chapter 189, the landowner and the operator shall be responsible for repairing any damage to Township roads caused by traffic associated with the timber harvesting operation, to the extent the damage is in excess of that caused by normal traffic, and shall be required to furnish a bond to guarantee the repair of such potential damages, as determined by the Township Board of Supervisors with advice from the Township Engineer.
 - F. **TOWNSHIP'S RIGHT TO INSPECT**
 - 1. The Township may, by its own personnel or outside agent, go upon the site of any proposed timber harvesting operation after an application to conduct such operation has been filed for the purpose of reviewing the plans for the proposed operation and thereafter recommending or opposing the proposed operation or recommending or requiring changes or modifications thereto.

SECTION 1 RIPARIAN BUFFERS MODEL ORDINANCE

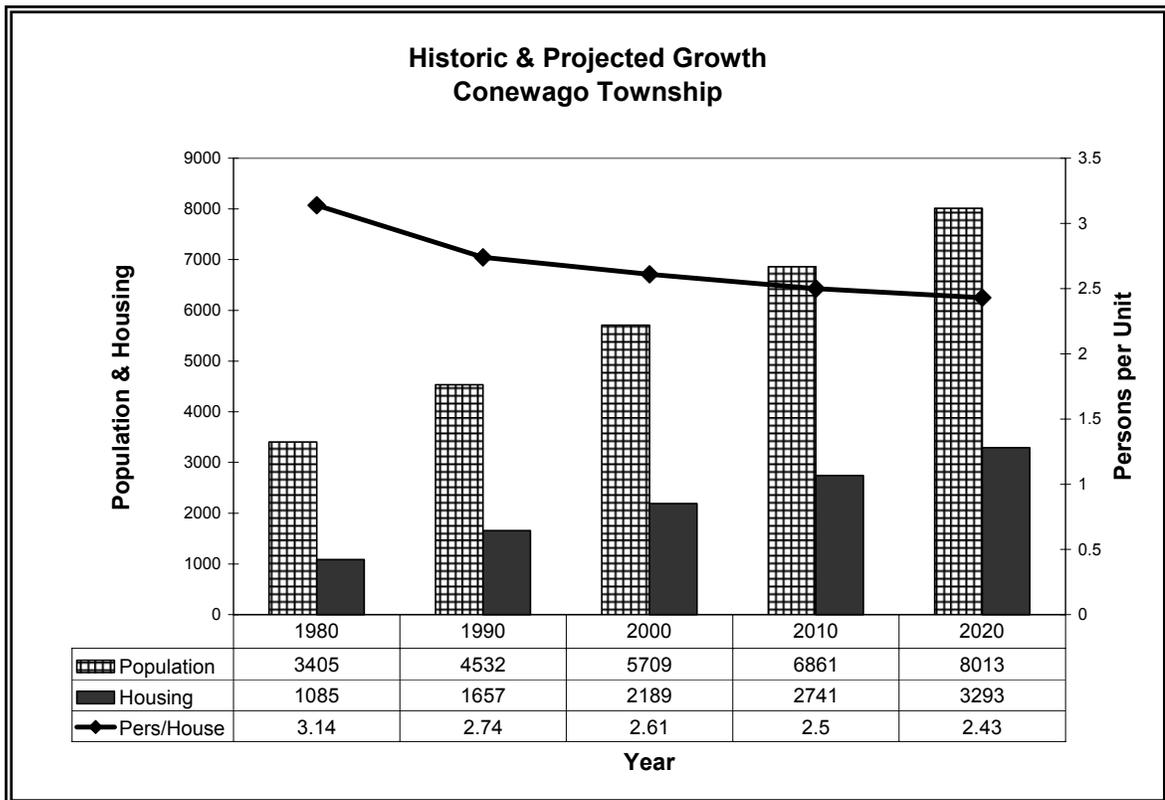
- A. PURPOSE** - The requirements of this Section help to create and/or restore wooded buffers along important watercourses and surface water bodies upon the Township's landscape. Specific measures will promote beneficial vegetation to reduce harmful erosion, absorb nutrients, reduce surface water pollution, offer year-round nourishment and habitat for animal wildlife both within and adjoining the water feature, reduce surface water temperature, offer interconnected linear paths for habitat migration and close-to-home passive open spaces amid the developing landscape.
- B. APPLICABILITY** - Any application for subdivision and/or land development application for property adjoining a watercourse or portion thereof, that is typically inundated throughout the year (under non-drought conditions) shall provide a riparian buffer in accordance with the following standards or, in the alternative, as approved by the Adams County Conservation District (ACCD) with input from the Township. (It is noted that landowners are encouraged to review the manual entitled "A Guide for Establishing and Maintaining Riparian Forest Buffers" published by the Chesapeake Bay Program.
- C. RIPARIAN BUFFER DELINEATION**
1. The applicant shall clearly depict upon the Natural and Cultural Features Map the proposed riparian buffer as approved by the Adams County Conservation District (ACCD) along with written verification from the ACCD of their review and approval of the proposed riparian buffer design.
 2. As an alternative the applicant shall clearly depict upon the Natural and Cultural Features Map the proposed riparian buffer comprised of the following three separate Zones:
 - A. **Zone 1:** The landward area located between the streambank edge under typical flow conditions, or the high water level for pond or lake shorelines and fifteen feet (15'), as measured directly perpendicular from the streambank/shoreline edge.
 - B. **Zone 2:** The area beginning at the inland edge of the above-described Zone 1 and the largest combined width of all of the following:
 1. fifty feet (50'), as measured directly perpendicular from the streambank/shoreline edge;
 2. the 100-year floodplain;
 3. any adjoining identified wetlands; and/or,
 4. any adjoining area characterized by slopes exceeding twenty-five percent (25%).
 - C. **Zone 3:** The area beginning at the inland edge of the above-described Zone 2 and extending at least ten feet (10') inland therefrom. Where a pasture is proposed just beyond the above-described Zone 2, no Zone 3 is required.
- D. RIPARIAN BUFFER PLANTINGS** - Each of the respective Zones of the riparian buffer shall include vegetation that already exists or will be planted using native species and maintained (except for invasive or noxious species as defined herein) by the applicant that satisfies the following design objectives. The applicant shall submit expert evidence that the existing and/or proposed vegetation satisfies such objectives that shall include a graphic depiction of proposed plantings and a schedule of vegetative species:
1. **Zone 1:** This Zone must include large maturing canopy trees and a ground cover of native seasonal grasses. New tree plantings should be selected, arranged and managed to accelerate canopy growth, and offer native species habitat and food supply. New grass plantings shall be selected and managed to filter out pollutants and offer habitat. All vegetation selected for this Zone must thrive in wet conditions;
 2. **Zone 2:** This Zone must include large maturing canopy trees generally three rows deep with a natural undercover. New tree plantings shall be selected that are rapid growing to intercept passing nutrients. Such trees shall be arranged and managed to accelerate canopy growth, and offer native species habitat and food supply. Successive understory plants shall be allowed to "evolve" with the canopy of this Zone; and,
 3. **Zone 3:** This Zone shall be planted with warm season grasses that are allowed to mature naturally without mowing. The tall grasses shall be managed to produce uniform overland stormwater flows that do not "channel" into Zone 2. New grass plantings shall be selected and managed to enable controlled grazing or haying so long as the grasses are not reduced to a point such that they no longer effectively disperse the surface flow.
- E. RIPARIAN BUFFER MAINTENANCE**
1. Riparian buffers must be generally undisturbed. Mature trees and long grasses absorb more nutrients than do manicured plants. Similarly, the more extensive root systems retain passing sediments. These characteristics reduce pollution and yield abundant food and habitat for wildlife. The temptation to "over-maintain" the streamside must be overcome.
 2. Where riparian buffers are to be located upon common property, the applicant must include a working plan that ensures perpetual maintenance of such buffer zones as specified in this Section 1.E.
 3. Where riparian buffers are to be located upon private property, the applicant must include a legally-binding instrument (e.g. easement, covenant, deed restriction, etc.) in a form acceptable to the Township Solicitor which shall designate Conewago Township as the grantee and ensures perpetual maintenance of such buffer zones as specified in this Section 1.E. Then all affected landowners shall be required to abide by such legal instrument.
 4. The following lists required maintenance activities for each zone:
 - A. **Zone 1:** This Zone compels little maintenance. As trees mature, die and decay, it is important that such natural debris be allowed to decompose within the stream. This will provide important food and habitat for beneficial microorganisms, fish and amphibious animals. However, any debris that may cause a rise in the floodplain due to obstruction or displacement shall be removed promptly. Streamside grasses shall be allowed to seasonally flourish and recede. Streamside cleanup of junk and man-made debris is permitted.
 - B. **Zone 2:** This zone requires the most attention, but not for some time after initial planting. Here, the objective is to develop a stable and broad canopy of tree cover. The trees within Zone 2 are fast-growing and therefore consume many nutrients. The regular pruning and trimming of these trees will increase their nutrient consumption, and growth rate and decrease the time to establishment as a closed canopy buffer, but should not jeopardize the important overhead canopy of shade. The natural understory shall be undisturbed, except for periodic litter cleanup; and,
 - C. **Zone 3:** This Zone also requires little maintenance. Long summer grasses shall be allowed to flourish and recede with the seasons. Grazing and haying are permitted so long as the residual grass length is sufficient to disperse overland stormwater flows into Zone 2 and avoid channelization.
- F. RIPARIAN BUFFER USE**
1. **Permitted uses** - No use shall be permitted that interferes with the natural maturation of the above described buffer plantings, except as follows:
 - A. Corridor crossings for farm vehicles and livestock and livestock watering facilities, all of which are accompanied by written evidence of approval of a water obstruction permit by the ACCD.
 - B. Corridor crossings for roads and railroads provided that such crossings are accomplished upon the least possible land area and disruption of the adjoining riparian buffer is minimized.
 - C. Public sewer lines, public water lines and public utility transmission lines, provided such lines are installed in such a manner that is most compatible with the installation and ongoing maintenance of the required buffer plantings as described in Section 1.D. of this Ordinance.
 - D. Passive recreation uses that prevent the harmful compaction of soil, tree root damage and avoid the channelization (natural or man-made) of surface water flow. Pedestrian paths can weave through Zone 2, but shall be provided with raised walkways. Impervious surface lot coverage is expressly prohibited.
 - E. Application of pesticides and herbicides that are specifically approved for the treatment and/or removal of invasive and/or noxious species within close proximity of watercourses, provided such pesticides and herbicides are used in strict accord with label instruction. Any materials applied as part of a County and/or State approved pest control program (e.g. West Nile Virus and etc.)
 2. **Prohibited uses** - The following uses and activities are expressly prohibited within a riparian buffer. This listing of prohibited uses and activities shall not be interpreted to permit other activities not listed, unless they are permitted by Sections 1.F.1. of this Ordinance:
 - A. Except as permitted in the above Section 1.F.1., any use that interferes with the natural maturation of the buffer plantings required in Section 1.D. of this Ordinance.
 - B. Except as permitted in the above Section 1.F.1., any use that interferes with the maintenance of the buffer plantings required in Section 1.E. of this Ordinance.
 - C. Storage and/or disposal of any toxic, hazardous or noxious materials and substances.
 - D. Except as permitted in the above Section 1.F.1.E., the application of fertilizers, pesticides, herbicides and/or other chemicals in excess of that permitted on an approved conservation and/or nutrient management plan as approved by the ACCD and/or local office of the USDA Pennsylvania Natural resources and Conservation Service.
 - E. Areas devoted to the on-site absorption of sewage effluent and/or agricultural fertilizers including but not limited to manure.

C. RESIDENTIAL (SR, VR, & MFR)

As described in Chapter VIII (Existing Land Use) of this Plan, the Township contains a variety of residential forms. Rural housing lies in outlying areas on large lots with on-lot utilities in Agricultural and Conservation areas. Most of these are scattered along the Township's roads. These rural areas are **not** part of this discussion but are covered by their respective previous land use categories (Agriculture or Conservation) depending upon their location.

Instead this Section describes the planned neighborhoods that are largely concentrated in and around the McSherrystown and Hanover Boroughs and the Township's several villages. These neighborhoods are to receive the vast majority of the Township's planned residential growth and are, or will be, fitted with public sewer and public water as well as other public services.

Chapter IV (Demographics) of this Plan analyzed population and housing trends within the Township. The following graphs past and projected growth across the entire Township. The net projected population and housing growth is summarized below:



PROJECTED NET CHANGES	
Year	2007 to 2020
Population	1498
Housing	718

In order to avoid claims of exclusionary zoning practices and to reflect contemporary housing styles, Chapter 4 (Demographics) recommended that the Township specifically plan to rely less upon single-family detached units in the future. In addition national housing trends suggest greater reliance on more dense/multi-family units and compact detached units. For these reasons it is recommended that the Township allocate future land use to meet the target growth in the following residential categories:

TARGET PROJECTED NEW HOUSING UNITS BY STRUCTURAL TYPE				
Total Units 2007-2020	Target single-family detached	Target attached & duplex	Total multi-family	Mobile Homes
718	+503 = (70%)	+ 108 = (15.0%)	+ 54 = (7.5%)	+54 = (7.5%)

As presented in Chapter V (Existing Land Use) of this Plan, the Township has considerable residential development that has been approved that has not yet been constructed and occupied. The following tabulates such residential “Pipeline Developments” whose locations are depicted on the Existing Land Use Map contained in Chapter V. These units will certainly contribute to the supply of new dwelling units to meet the Township’s projected residential development:

PIPELINE DEVELOPMENT PROJECTS		
Development Name	Map No.	Uses Yet To Be Built
Chapel Ridge II	R1	96 duplexes / 1 single family detached
Villas at Cattail	R2	42 single family detached
Oak Hill Phases 1 & 2	R3	56 duplexes / 13 single family detached
Chapel View Phase 2	R4	38 single family detached
Allwood Manor Phase V	R5	31 single family detached
Conewago Heights	R6	5 single family detached
Total pipeline dwelling units – 152 duplexes & 130 single family detached units		

The following table lists the various Residential Zones depicted on the Future Land Use Plan (in addition to the “Pipeline Development” properties) along with measurements of land area and potential developments based upon permitted densities:

PLANNED RESIDENTIAL GROWTH				
Land Use Category	Planned Acreage	Area (75%) devoted to development features ¹	Base Density Units/Acre ²	Total Potential Planned Units
SR	228	178	4	714
VR	5	3.75	6	22
MFR	22.8	17.1	6	102
Township	255.8	191.85	4-6	838
¹ These figures reduce the area for development to reflect: <ul style="list-style-type: none"> the considerable areas of significant development constraint that exist throughout the Township; the features within developments that cannot be devoted to actual residential use (e.g. roads, utility easements, parks and etc.); and, the "Right-to-Travel" doctrine which requires that municipalities provide for some choice in personal mobility and residency. ² These figures may need to be adjusted depending upon the use of Residential Zones as TDR Receiving Zones.				

Next by combining the pipeline development units with those that are potential based upon planned future land uses results in the following:

COMBINED PIPELINE AND PLANNED DWELLING UNITS	
Pipeline Development Dwelling Units	282 units
Planned Land Use Dwelling Units	838 units
Total Potential Dwelling Units	1120

As can be seen the total number of potential housing units represents more than 155 percent of the projected residential growth (718 units) within the Township between years 2007 and 2020. Therefore, local officials can resist claims that the Plan does not provide for a fair-share of residential growth within the Township.

Furthermore by assigning potential dwelling unit types based upon the prevailing design standards for each respective pipeline development and Residential Zone the following table predicts that availability of land to be used for various housing unit types along with a comparison of the target projections derived to ensure a proper diversity of housing types as follows:

COMPARISON OF POTENTIAL RESIDENTIAL DWELLINGS WITH "TARGET" RESIDENTIAL PROJECTIONS				
Pipeline Development Name	Single family detached	Duplex and attached	Multi-family	Mobile homes
Chapel Ridge II	1	96		
Villas at Cattail	42			
Oak Hill Phases 1 & 2	13	56		
Chapel View Phase 2	38			
Allwood Manor Phase V	31			
Conewago Heights	5			
Proposed Zone				
Suburban Residential	642 (90%)			71 (10%)
Village Residential	11 (50%)	11 (50%)		
Multi-Family Res.			102 (100%)	
Total Potential Units	783	163	102	71
Target Units Projected	503	108	54	54
% Provided vs. Target	156%	151%	188%	131%

As the table reveals, the development potential each of the various housing types is exceeded; therefore ***local officials can act confidently that they have met their burdens to offer sufficient areas for residential development according to projected growth and provide for a suitable variety of housing unit types and densities.***

Next specific recommendations and strategies will be presented for each of the planned residential zones along with typical and/or suggested design standards.

Suburban Residential (SR) - Within the Township, much of the residential development that has occurred over the last few decades has taken the form of suburban housing. This Plan acknowledges this existing pattern and provides for logical yet tight expansion of these neighborhoods and in some cases in-fill development sites. In all 228 undeveloped acres have been identified on the Future Land Use Map in addition to those "pipeline" development projects described above. These planned areas could accommodate 713 new dwelling units at a base density of 4 units per acre and pipeline developments are expected to add another 130 detached dwelling units. The Township might also want to reduce the base density to 3 units per acre to incentivize the use of TDRs sent from the Agricultural Zone to achieve greater density and/or the preferred use of Traditional Neighborhood Design (TND) which will be discussed later in this Section.

The locations of these planned neighborhoods often follow the Township's extensive network of utility lines. Therefore the Township should require that all new developments make use of both public sewer and public water with the following minimum design standards:

SUITABLE DESIGN STANDARDS FOR THE SR ZONE								
Utilized Public Utilities	Lot Area	Lot Width at Building Setback Line	Maximum Lot Coverage	Minimum Yard Setbacks				Maximum Permitted Height
				Front	One Side	Both Sides	Rear	
Both Public Sewer & Water	10,000 sq. ft.	80-100 ft.	35%	35 ft.	15 ft.	30 ft.	35 ft.	35 ft.

Planning for residential growth involves more than merely assigning acres for development. Municipalities have a responsibility to provide for a wide range of housing types and costs. Development of the SR Zone exclusively for suburban-style single-family detached dwellings would continue the Township’s sprawling development pattern that would consume valuable natural features and productive farmlands at an unnecessarily high rate.

Instead the goals for this Plan emphasize the need to cluster compact forms of residential development at higher densities with a wide range of “urban amenities” (e.g. sidewalks, porches, street trees, on-street parking and rear yard alleys with garages). Therefore ***it is recommended that the SR Zone include an optional set of “overlay” standards. These standards should adopt a “Traditional Neighborhood Design” (TND) philosophy that departs from the base suburban style.***

TNDs feature designs and characteristics that resemble communities more like the adjoining Boroughs, than sprawling suburbs. A mixture of housing unit types balances the community with diversity and interest. These communities are sweeping the nation as society recognizes the consumptive and dissociative aspects of suburban sprawl. Recent amendments to the Municipalities Planning Code specifically enable and encourage this new approach. This recommendation also directly responds to one of this Plan’s stated goals:

“Promote cluster and TND development as a means of creating a more compact arrangement for future housing and as a means of defining open space around and on the perimeter of new neighborhoods.”

In return, the Township will receive neighborhoods that feature a better integration of important natural and cultural features, more common open space, better pedestrian access and mobility, more diverse housing styles, and a setting that invites neighborliness and interaction.



The Preserves contain some neo-traditional design features that promote a pleasant compact neighborhood.

However, developers are often reluctant to undertake traditional neighborhood designs when they require special zoning reviews as conditional uses or special exceptions. They also resist strict prescribed design requirements that offer little flexibility. Consequently, very few contemporary examples of traditional neighborhood designs have been built within Central Pennsylvania; although that is changing. ***It is important that the local officials invite the use of traditional neighborhood designs through a variety of short-term and ongoing actions.***

First, as part of the development of new zoning policies local officials should participate in a joint workshop to develop a set of traditional neighborhood design regulations that meet their needs. This work should be undertaken with representatives from the staff along with the Township’s development review advisors (engineers, attorneys and consultants). Suitable regulations should:

1. Require a “proper site planning process” and review early in the development review process that effectively incorporates and protects important natural and cultural features, and then provides an opportunity for the developers and the community to reach some agreement on the design priorities for the site;
2. Ensure a diversity of housing types, sizes, and costs, with particular emphasis on scattered-site, affordable housing opportunities at higher densities than that permitted under the base density of the respective Zone (e.g. of up to 6 units per acre);
3. Provide for interconnected and rectilinear narrow street and intersection designs with on street and rear yard off-street parking, and abundant well-lit sidewalks to promote pedestrian mobility and safety;
4. Require the provision and efficient use of local infrastructure and services;
6. Reflect the historic and traditional building styles of the region;
7. Reserve and feature civic uses and open spaces as community focal points;

8. Invite regular and frequent social interaction among its inhabitants through reduced building setbacks and the use of front porches;
9. Blend all of these above-described features in a way that promotes community identification and a “sense-of-belonging” for the residents; and,
10. Provide for a set of requirements that achieves the preceding designs, yet allows enough flexibility for developer ingenuity and creativity, and applies a development review process that is streamlined and can be effectively managed by local officials and staff.

Once a draft ordinance is prepared, a series of local official training sessions to familiarize and seek feedback from would-be users of the ordinance should be conducted:

1. The first work session should be held for local staff, engineers, planning commissioners, and elected officials. Here, local officials need to be educated about the benefits of TND and trained on how they would administer the ordinance. Local officials should be shown with actual or hypothetical examples of how the ordinance is applied. Feedback during this process should be used to fine-tune the ordinance;
2. After local officials have had the chance to understand and refine the TND ordinance, another work session should invite review and comment from local developers. Local officials should emphasize their intent to “get serious” about TND as the preferred development form, and plainly explain that a higher standard of design is expected from all developers. Then, local officials should invite constructive review of the TND ordinance, to enable practical use by the developers. This will likely take several weeks as the developers study the ordinance and its consequences. Suggestions to streamline the review process should be incorporated, unless local officials fear a lack of control over the process and its outcome. Revisions to the design standards should be made when local officials are convinced that a better standard results; and,
3. Finally, a similar public education and awareness session should be held to explain the ordinance and its impact on respective neighborhoods. Local officials should promote the benefits of TND to citizens and homeowners groups. They should also candidly explain their intent to approve TND developments within the various neighborhoods, along with their higher densities. In this manner, local officials can forewarn would-be NIMBY opponents of the municipality’s commitment to this form of development, and invite constructive neighbor involvement during the review process. This display will also assure prospective developers that local officials would not allow NIMBY opponents to prevent approval of an otherwise preferred TND.

Once these meetings have been held and the Ordinance is adopted, the real work begins. Local staff and officials need to be ever-vigilant in their desire to promote TND within the community. Initial developer resistance is likely, and unless local officials turn-away substandard plans, their TND efforts will have been in vain. Developers who miss the mark should have their plans denied firmly and quickly. Conversely, developers who attempt TND designs should be welcomed and assisted in their development review process and approval. Over time, this will

“send the right message” to developers and citizens alike.

Finally, as the Township possesses no mobile home parks, it is recommended that this SR Zone be fitted with a mobile home park conditional use. The criteria for this use should offer sufficient density and dimension to ensure an efficient yet functional design that can be buffered from adjoining traditional neighborhoods.

Village Residential (VR) –

Historically much of the Township’s housing diversity has been anchored within the older neighborhoods of Midway and Pleasant View Villages. Within these areas, the traditional residential pattern of development must be reflected to continue and grow. Detached dwellings, side-by-side duplexes and conversion apartments are common. Most of these neighborhoods feature long and narrow lots with tightly-knit houses built close to the sidewalks and on-street/alley parking. There exists some diversity in density and lot dimensions throughout the Township; however, the grid street/block pattern generally creates uniform lot depths from one neighborhood to the next. Some rear yard garages upon narrow alleys also exist.



Typical streetscape within the Village of Midway with tightly-knit housing, sidewalks and on-street parking.

The Future Land Use Map depicts a total of about 5 acres of undeveloped land within this VR Zone which could produce up to 22 dwelling units at 6 units per acre. Within the Village of Midway such areas are exclusively provided as infill developments while in the Village of Pleasant View some village expansion is planned.

A few of the key community planning goals identified for this Plan emphasize the need to encourage the use of infill developments “to reinforce and add value to existing neighborhoods” “by minimizing ordinance restrictions to enhance the appeal of infill.” To encourage infill developments it is recommended that regulations for such developments be simple and practical. The following presents observed design standards within these areas that will afford efficient infill development that is consistent with adjoining uses:

SUITABLE DESIGN STANDARDS FOR THE VR ZONE								
Dwelling Unit Type	Lot Area	Lot Width at Building Setback Line	Maximum Lot Coverage	Minimum Yard Setbacks				Maximum Permitted Height
				Front*	One Side	Both Sides	Rear**	
Detached	4500 sq. ft.	25 ft.	20%	10 ft.	5 ft.	10 ft.	35 ft.	35 ft.
Duplex	3240 sq. ft.	18 ft.	25%	10 ft.	2 ft.	NA ft.	35 ft.	35 ft.

* Should be subject to adjustment based upon the prevailing setbacks of adjoining uses.
 ** Rear yard garages should be setback no less than 20 feet from adjoining alleys.

To accommodate logical change in these neighborhoods, zoning policies must align with the preceding design standards. This will enable residents to undertake projects that are consistent and compatible with nearby uses, without the need for variance and/or special exception applications and hearings. This will ease municipal workload and increase public acceptance of municipal practices and policies.

Accordingly, these standards represent common denominators that are at a higher density with smaller setbacks imposed than those found on some of the properties within these neighborhoods. **Hence the Township should include language within the VR Zone that specifically varies required setbacks (particularly in front yards) to reflect those found on the same block.** This will ensure compatibility on a block-by-block basis. **Building height is generally between 2 and 3 stories; this too should be reflected in design standards.**

Another issue that is commonly problematic within densely-developed neighborhoods relates to accessory uses. Accessory uses are structures or activities that are incidental to the primary use of a property. For example, a residential accessory structure could include a detached garage, swimming pool or satellite dish antenna. Similarly, a residential accessory activity could be a yard sale, the storage of a boat or trailer, or the repair of personal automobiles.

The impacts of accessory uses are more easily absorbed in rural or suburban areas where lot-to-lot separation is greater. Within the Villages, however, such separation is impossible and neighbors are more easily affected by another's activities and actions. **It is recommended that applicable residential accessory land use regulations be incorporated within the VR category; however, not to the point that they violate recently adopted amendments to the Municipalities Planning Code which authorizes widespread use of "home-based businesses."**

The VR Zones' central locations cause them to be linked with the Village Commercial and Mixed Use Zones within the Village of Midway. Consequently, these neighborhoods already include other nonresidential uses that contribute to the Township's small-town character. **These uses should be specifically accommodated. Civic uses, churches, schools, parks and playgrounds and limited day care facilities should all be permitted as they provide important services within these established neighborhoods. Signage associated with these other use should reflect a residential and pedestrian orientation.**

Existing neighborhoods within the VR Zone have conversion apartments interspersed with detached dwellings. **Conversion apartments provide opportunities for scattered site affordable housing that can be used as starter units for young families or empty-nest units for the elderly. These housing opportunities should be incorporated into the VR category; the following presents "typical" criteria imposed upon these uses:**

Section __ Conversion Apartments

1. Within the (VR) Residential Zone, an existing single family detached dwelling with at least _____ square feet of habitable floor area that existed on the effective date of this ordinance may be converted into one (1) additional dwelling unit, subject to the following criteria:
2. The applicant shall furnish evidence that an approved system of water supply and sewage disposal will be utilized;
3. No modifications to the exterior of the building (except fire escapes) that would alter its residential character shall be permitted unless authorized by the Historic Architecture Review Board;
4. Each dwelling unit/use shall have at least 400 square feet of habitable floor area and a direct means of escape to ground level; and,
5. The applicant must provide for one (1) off-street parking space assigned to the proposed unit.

Multi-Family Residential (MFR) – Conewago Township is planned to experience

considerable growth of higher-density forms of housing. In the year 2000, the US Census reported that the Township contained 485 dwelling units that were not detached dwellings or just under 23 percent of the Township’s total housing stock. In order to reflect national housing trends, to reduce suburban sprawl and to offer a variety of housing unit types and densities, the MFR Zone with its pipeline development projects has the potential to accommodate an additional 251 duplex, attached and multi-family units by the year 2020. The MFR Zone accommodates the Chapel Ridge II and Oak Hill Phases 1 & 2 pipeline development projects and provides for 22.8 acres which could accommodate 102 new units. It should also be noted that the types of housing units permitted within the VR Zone and the TND option under the SR Zone all provide for the opportunity for multi-family housing unit types.



Townhouses along Conewago Drive



Sunset Vista multi-family dwelling

Areas planned in this category largely acknowledge existing uses and the presence of public utilities. New MFR Zones are confined to one area adjoining Ram Drive and another located along the west side of Oxford Avenue just north of the McSherrystown Borough boundary. The locations of these Zones have been deliberately scattered to “spread” the traffic impact across several local traffic sheds. **All areas are planned for public utility service and should be fitted with sidewalks and access to other nearby public facilities (eg. parks, churches, schools, post offices, etc.). The table on the following page presents recommended high-density residential design standards that should be applied to the MFR Zone.**

Another consideration with high-density housing relates to off-street parking. Generally, units with assigned off-street parking spaces yield higher values and likelihood for owner occupancy as opposed to rental occupancy. Consequently, municipalities have begun to offer design incentives for parking arrangements that foster these preferred arrangements. ***Local officials should carefully explore a range of parking schemes and shared driveways for the various housing unit types and determine if one or more schemes best fit the local demands and community development objectives.***

Like in the VR Zone, ***it is recommended that applicable residential accessory land use regulations be incorporated within the MFR Zone; however, not to the point that they violate recently adopted amendments to the Municipalities Planning Code which authorizes widespread use of “home-based businesses.”***

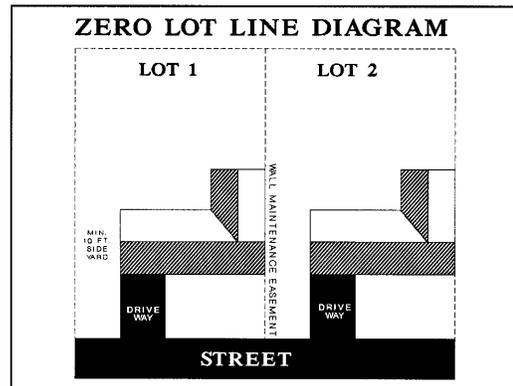
Like in the SR Zone, the Township should encourage the use of TND within the MFR Zone. Base densities permitted within the MFR Zone should be limited so that density bonuses can be provided when the preferred TND option is applied. Similarly, a reduced base density would also enable the receipt of TDRs from the Agricultural Zone to achieve greater density and assist in the permanent preservation of farmland.

Finally, this category should also regulate other specialized high-density residences such as assisted living, nursing, rest or retirement homes and campuses, and boarding houses. These uses often involve specific needs that compel special attention and review, either by special exception or conditional use.

SUGGESTED BASE DESIGN STANDARDS FOR THE MFR ZONE									
Use	Minimum Lot Area (sq ft.)	Maximum Permitted Height	Minimum Lot Width @ Setback/(Frontage)		Maximum Lot Coverage	Minimum Required Yards			
						Front	One Side	Both Sides	Rear
Detached Dwelling	8,000	35 ft.	80 ft.	(60 ft.)	40%	25 ft.	10 ft. ¹	20 ft.	15 ft.
Duplexes	3,500 per unit	35 ft.	35 ft. per unit	(25 ft. per unit)	60%	25 ft.	10 ft.	N/A	15 ft.
Townhouses ²	2,400 per unit	35 ft.	24 ft. per unit	(18 ft.) per unit	70%	25 ft.	15 ft.	(End Units)	20 ft.
Multiple-Family ³	1- 2 acres	35 ft.	200 ft.	(200 ft.)	60%	35 ft.	30 ft.	60 ft.	35 ft.

¹Within the MFR Zone, single-family detached dwellings may employ a zero-lot-line design when the following conditions have been satisfied:

- Minimum lot width shall be forty-five feet (45') and thirty-five feet (35') at the building setback and the lot frontage, respectively.
- One side wall of the structure may be located no less than one inch (1") from one of the side lot lines when adjoining another zero-lot-line dwelling lot. The opposite side yard shall be at least ten feet (10') wide.
- A perpetual six foot (6') wall-maintenance easement shall be provided on the lot adjacent to the zero-lot line, which shall be kept clear of structures and vegetation. This easement shall be shown on the plat and incorporated into each deed transferring title to the property. The wall shall be maintained in its original color and treatment, unless otherwise agreed to in writing by the two affected lot owners.
- Roof overhangs may penetrate the easement on the adjacent lot a maximum of twenty-four inches (24"), but the roof shall be so designed that water runoff from the dwelling place on the lot line is limited to the easement area.
- The wall of a dwelling located along the zero-lot-line shall have no openings (e.g., windows, doors, air conditioning units, vents, etc.), unless such openings are located at least eight feet (8') above grade, and have translucent panels.



²No townhouse building shall contain more than eight (8) units. For each townhouse building containing more than four (4) units, no more than sixty percent (60%) of such units shall have the same front yard setback; the minimum variation of setback shall be two feet (2'). In addition, no more than two (2) contiguous units shall have identical roof lines that generally parallel the ground along the same horizontal plane. All townhouse buildings shall be set back a minimum of fifteen feet (15') from any interior access drives, or parking facilities contained on commonly-held lands. All townhouse buildings shall be set back at least thirty feet (30') from any perimeter boundary of the development site. In those instances where several townhouse buildings are located on the same lot, the following footnote 3 shall apply.

³In those instances where several multiple-family dwelling buildings and/or townhouse buildings are located on the same lot, the following separation distances will be provided between each building:

- Front to front, rear to rear, or front to rear, parallel buildings shall have at least fifty feet (50') between faces of the building. If the front or rear faces are obliquely aligned, the above distances may be decreased by as much as ten feet (10') at one end if increased by similar or greater distance at the other end.
- A minimum yard space of thirty feet (30') is required between end walls of buildings. If the buildings are at right angles to each other, the distance between the corners of the end walls of the building may be reduced to a minimum of twenty feet (20').
- A minimum yard space of thirty feet (30') is required between end walls and front or rear faces of buildings.
- All multiple-family dwelling buildings shall be set back a minimum of fifteen feet (15') from any interior access drives or parking facilities contained on commonly-held lands.

D. MIXED USE (MU)

Conewago Township's location along several older travel routes and nearby Boroughs has caused its settlement pattern to change over time. What were once acceptable locations for residential development are now less desirable due to increased traffic and its attendant impacts. Third Street (PA Route 116) is an important historic highway that links Hanover Borough to Conewago Township and beyond. Hanover Borough has served as the central business district for this locale. But just beyond this commercial core are homes that line this road.

As society has grown and become more mobile, demand for even more commercial services increased along this road. However, the tightly knit neighborhoods that have developed here leave little room for commercial expansion, except within the existing homes along the highway. With even more growth and mobility came traffic congestion and the impacts of traffic streams along the highways. All of these factors combined to promote the conversion of the older homes into other uses, besides detached dwellings.

Over time, some of these former homes have been converted into small retail, business and office uses, and/or conversion apartment units. In addition, some smaller sites that were once vacant, have now been occupied by small commercial buildings. This conversion has occurred because of the high volume of traffic that uses the road and provides a captive market to small businesses.



A Mixed Use Zone along 3rd Street will facilitate adaptive reuse of homes along this busy street while protecting the predominate residential character.

Recognizing these factors, the Plan recommends a Mixed Use Zone along this corridor. However, it is vital that existing single-family residence clusters be preserved in their midst. To enhance compatibility within this Zone, it is recommended that the MU Zone permit residences by right under the same terms as the VR Zone. However, this area should also allow permit the adaptation of existing buildings for non-residential use.

Specifically, limited businesses, services, offices and conversion apartments should be permitted by special exception or conditional use. Uses should be limited in size and scale and should be tied with the ready pedestrian access afforded by the existing sidewalks. Any proposed access drives along Third Street should be limited to one or two lanes only so as not to conflict with safe pedestrian travel.

Nonresidential land uses should be subject to specifically established and strictly applied design standards for lot coverage, landscaping/screening, signage, outdoor

storage and pedestrian access. Also, **this Zone should provide a deliberate disincentive for the razing of existing buildings** to accommodate more contemporary commercial building styles (eg. 1-story block buildings with flat roofs) that would be incongruous with the prevailing residential development pattern. **Signage associated with these other use should reflect a residential and pedestrian orientation.**

On the other hand, setbacks, parking, loading and driveway access conditions should be subject to site plan review, in the hopes that several adjoining properties can become integrated. Such integration will help to reduce traffic congestion, while allowing for reasonable land use along these corridors.

The adaptation of mixed-use neighborhoods does not occur rapidly or without controversy. Nonetheless, if the Township is committed to preserving its small-town qualities, this Zone can provide for limited and practical adaptive reuse of its residential housing stock that acknowledges the impacts of the adjoining roads without succumbing to wholesale strip commercial development. This effort will also improve traffic flow along this route by reducing conflicting traffic movements.

Finally, depending upon the commitment to preserve this corridor's historic character, the Township could target these areas for a local historical district to preserve significant historical resources. This would require the creation of a Historical Architecture Review Board (HARB) and would be subject to the rules described in Commonwealth of Pennsylvania Act 167 (1961), as amended. This program could help to significantly protect the "small-town" charm exhibited in the older structures.

E. COMMERCIAL (VC & HC)

Within the Conewago Township there are three separate areas of proposed Commercial Zoning. The first is located in the Village of Midway straddling West Elm Avenue and along Third Street and Oxford Avenue. Next is the existing shopping center located in the northwest quadrant of the intersection of Centennial and Hanover Roads. Last is a large commercial area generally north of Radio Road along both High Street and the Carlisle Pike.

Village Commercial (VC) – Like Third Street as described above in the MU Zone, West Elm Avenue is another older street that has radiated out of Hanover Borough into Conewago Township. Here a greater concentration of residences has been replaced and/or converted with nonresidential purposes. Several of these newer redevelopments have assembled parcels to create attractive and functional strip commercial shopping centers. **This is the perfect response for this corridor and the Township should continue and refine its commercial development policies to further encourage similar redevelopments.**

First, the Township should be selective in the uses allowed in the VC Zone to be pedestrian-friendly and at a proper scale. This will allow for confident reinvestment as owners will be assured of a pleasant and intimate setting that is free of more intensive and objectionable uses. This does not suggest that customers will suddenly stop visiting the area via automobile, but that "potential" uses should be ones that can serve pedestrians equally well. Such uses would have the added benefit of not requiring the frequent delivery of merchandise via large tractor-trailers, in an area lacking adequate off-street loading

space. Examples of suitable uses include:

card, book, magazine, newspaper, music, and video shops; specialty food stores; bakeries; delicatessens; wine shops; clothing boutiques; barber and beauty salons, sporting goods and musical instrument shops; drug, tobacco, hardware, and 5 and 10 cent stores; restaurants, taverns, ice cream parlors, and outdoor cafes; bed and breakfasts; photographic, art and dance studios; offices; photocopy and office supplies; computer and software sales; arcades and movie theaters; tailors; laundromats and dry cleaning drop-off stations; flower shops; jewelry, watch and small appliance sales and repair; corner grocery stores, including outdoor display, etc. In addition, various civic uses like churches, cemeteries and post offices are also appropriate.

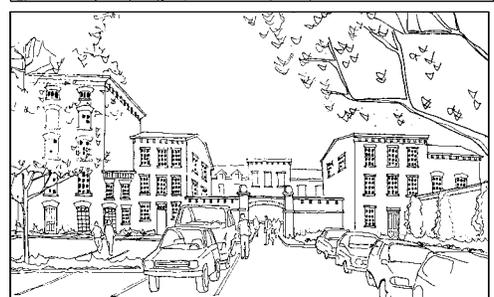
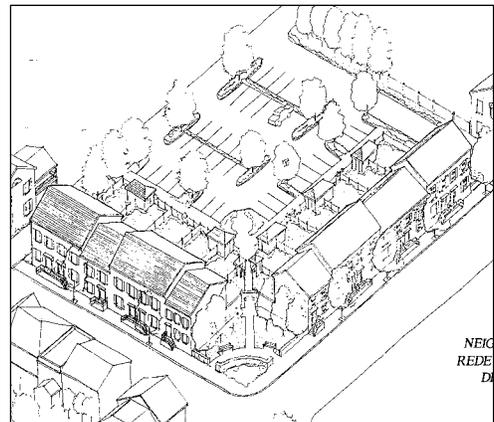
Overall retail size per store should be limited, so as not to exceed its local orientation, this is not the right place for big-box stores but rather small local goods and services. The development of multi-shop arcades or small strip shopping centers should be encouraged.

In addition, some communities permit residences on upper floors for those persons who can benefit from proximity to nearby goods and services and/or cannot afford their own residence. ***However, it is recommended that the upper level apartments be permitted only as accessory to the principal commercial uses of street level floor space so that property owners don't convert their entire buildings into apartments.*** In this manner commercial potential is sustained and residential parking demands would largely occur in the evening after businesses have closed.

The Township could offer some relief from the off-street parking requirements for properties that clearly promote pedestrian use by incorporating streetscape amenities, such as signs, canopies, benches, light poles, and on-street parking. ***All commercial signs should be limited to reflect their pedestrian orientation.***

Zoning requirements could also prohibit the placement of off-street parking and/or loading within the front yard, in favor of sidewalk "build-to" lines with outdoor cafes and limited outdoor display bins. Other outdoor storage areas should be prohibited to enhance site-to-site compatibility. Common rear yard parking lots with connecting walkways reflect the most contemporary commercial designs enhancing the vitality of the streetscape. The following drawings illustrate this innovative concept.

To efficiently use this space, several adjoining rear yards would need to be assembled and developed together. The Zoning Ordinance should allow for, and even encourage, such an arrangement by waiving parking setbacks and enabling shared vehicular access drives. Then, landscape screening should be applied along the alley to protect adjoining residential properties located on the other side of the alley and/or street.



Ground-level view of mid-block walkway from common parking lot toward Street.

Pedestrian access from the parking lots to the downtown streetscape should be provided by at least one mid-block landscaped walkway. Such walkways should be well lighted for safe nighttime passage and security. They should also reflect the desirable amenities of the downtown streetscape (landscaping, benches, old-style light fixtures, archways, modest directional signage, waste receptacles, etc.).

The VC Zone's streetscapes are functional and attractive at some locations but not so at others. Some beautification would promote a cohesive and coordinated sense-of-place.

The Township should consider streetscape beautification projects that would provide for uniform and ADA-compliant sidewalk designs, street and directional signs, historic lighting fixtures, standard benches, tree grates and trash receptacles. The staff should constantly monitor grant monies that would be available for such projects.

The Home Town Streets and Safe Routes to School Program (HTS/SR2S) is a Federal reimbursement program established with the intent of improving downtown and commercial center streetscapes and providing physical improvements that promote safe walking and biking passages to our schools. Typical improvements provided by this program include sidewalk improvements, street lighting, crosswalks, bicycle amenities, signage, curb extensions and some traffic calming projects among others. Additional information about the program can be found at the Adams County Office of Planning and Development and at the following website:

<ftp://ftp.dot.state.pa.us/public/Bureaus/Cpdm/WEB/HTS%20-%20SR2S-TE-2005-06.pdf>

To promote revitalization, local officials also need to advertise their willingness to work with local entrepreneurs to achieve the right type of development. Too often, would-be proprietors are afraid of the development review process and the local opposition that can emerge. Local officials should emphasize their willingness to cooperate and work through any specific difficulties that jeopardize reinvestment. This is not to say that they should approve every request, but the local business community should feel as though they have an ally in the review process when the right type of use is proposed. This will require an ongoing demonstration of this commitment. Over time, local entrepreneurs will come to trust the Township officials and feel free to exercise their creativity and entrepreneurial spirit through reinvestment to the benefit of the community and Township.

Township Officials should challenge and energize the local business owners associations to oversee and nurture these areas through various programs and activities. This group should be vigilant in their advocacy for these areas at all times, and keep the local officials' and public's attention squarely on its needs over the "long haul." This should be accomplished as a short-term activity that will lead to an ongoing process of improvement.

Many commuters travel along West Elm Street each day. ***It is recommended that local businesses provide goods and services that target these daily commuters.*** Convenience goods and services and breakfast and supper-time menus can create new customers, and intercept others who may look for similar services on their way to and from work or school. ***Also, regularly scheduled weeknight business hours (eg. Wednesday nights) or special events (Friday night bazaars or concerts) can enliven this area as an activity center and distinctive destination.***

Any proposed access drives should be limited to one or two lanes only so as not to conflict with safe pedestrian travel and drive-thru lanes should not be permitted separate direct access onto adjoining roads.



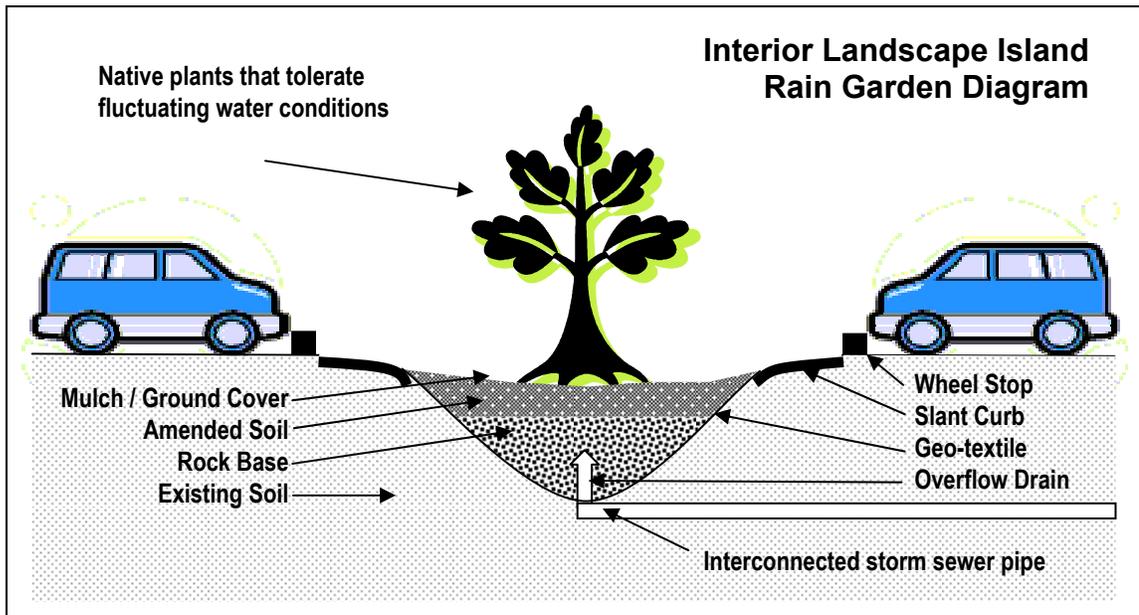
Township Officials should continue and refine its commercial development policies to promote new integrated shopping centers along West Elm Avenue like the recently developed Linden Mill Center.

Zoning design standards should promote shared use of access drives, and off-street parking and loading spaces. Outdoor storage should be prohibited in most cases and, if allowed, effectively screened from adjoining roads and residences; this will be particularly important for those uses located along the south side of West Elm Avenue that abut existing residential neighborhoods.

Highway Commercial (HC) - Unlike many other areas within Central Pennsylvania, Conewago Township has a relative lack of strip highway commercial development. While strip commerce clearly serves Township residents, it is mostly located in Hanover Borough. In any event the Township has two developing commercial areas that are characterized with Highway Commercial Zone features and locations. The first is the combination grocery and variety store are located just west of McSherrystown Borough within a small shopping center. It would appear that a branch bank is under development as a freestanding pad site. This site features shared access, loading, parking, stormwater management and signage.

This site could benefit from increased landscape materials to define travel lanes, reduce thermal pollution and soften the appearance of the expansive parking lot. While this site is largely developed ***the Township should consider strengthening its landscaping strip and internal landscape island requirements. Then as new uses seek occupancy over time, the shopping center should be required to gain gradual compliance.***

One more recent approach to interior landscaping are called rain gardens. These small and scattered landscape islands act as stormwater management collection basins that promote stormwater regeneration at various locations across the site. They essentially serve multiple functions of landscaping and stormwater management at the same time. During periods of excessive stormwater runoff, these rain gardens have overflow drains that interconnect with the overall stormwater management system. The following illustrates some of the elements of a rain garden landscape island:



The second concentration of recently developed commerce exists straddling High Street in the northeast corner of the Township. In this vicinity retail uses appear to be premised upon nearby Carlisle Pike in York County. Here can be found auto dealerships, an archery center, health clinic, music store, bank, hobby shop, day care, lighting store, as well as several strip centers with a print shop, glass and mirror shops a notary, salon, chiropractor, mortgage office, tanning salon, credit union, learning center and physical therapist. This area tends to feature higher site design with most contemporary amenities; however, landscape strips and islands lack trees and shrubs.

Again the Township should strengthen its landscaping requirements. Because the Township must accommodate every conceivable land use, this HC Zone should provide for a wide range of commercial uses and activities. ***Specific zoning regulations should be developed to respond to those uses that pose specific concern (e.g. adult uses, fast-food restaurants, nightclubs, casinos and etc.) and then engage a deliberate and careful special exception or conditional use zoning review process.***

Furthermore, general zoning regulations applied to all uses should seek to confine impacts to respective development sites. Regulations governing off-street parking lots, off-street loading spaces, access drives, signs, noise, lighting, outdoor storage, waste storage and operations and performance should all be kept to community standards and then vigorously applied.

Another recent trend in both commercial and industrial land use relates to required building height. So many of today's standard commercial developers produce single-story big box stores with massive at grade parking lots. This practice is the result of an ability to secure land at relatively low cost and the community's legal mandate to keep a ready supply of such developable commercial zoning.

Some municipalities have grown tired of this consumptive practice and now require large-scale developers to build multi-story buildings and garages. Given Conewago Township's limited commercial land area, it should strongly consider this new approach. What once might have take 15 or 20 acres to construct can now be accomplished upon half or even less than that. Consider the following illustration.

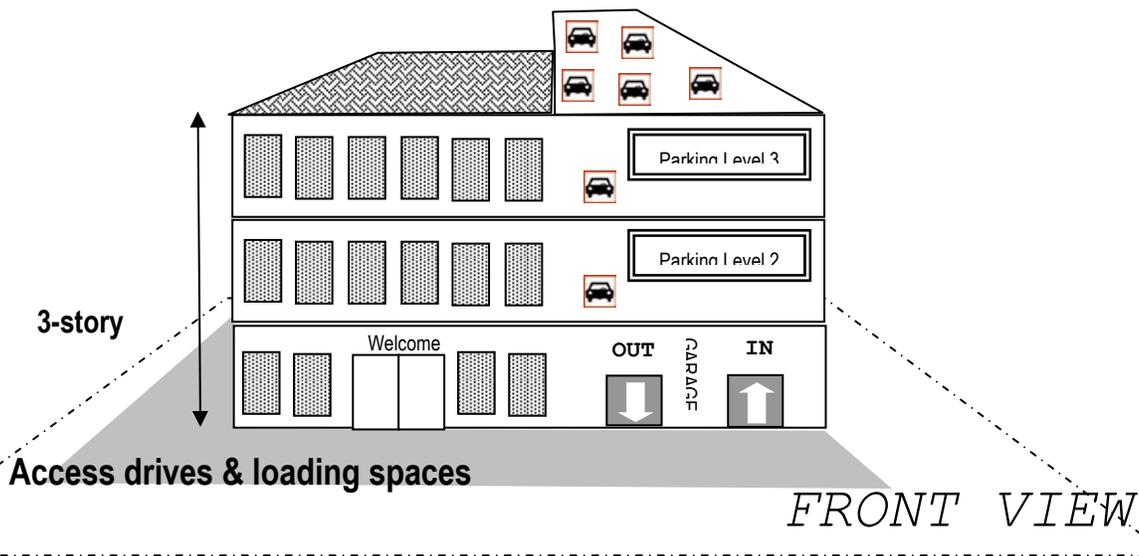
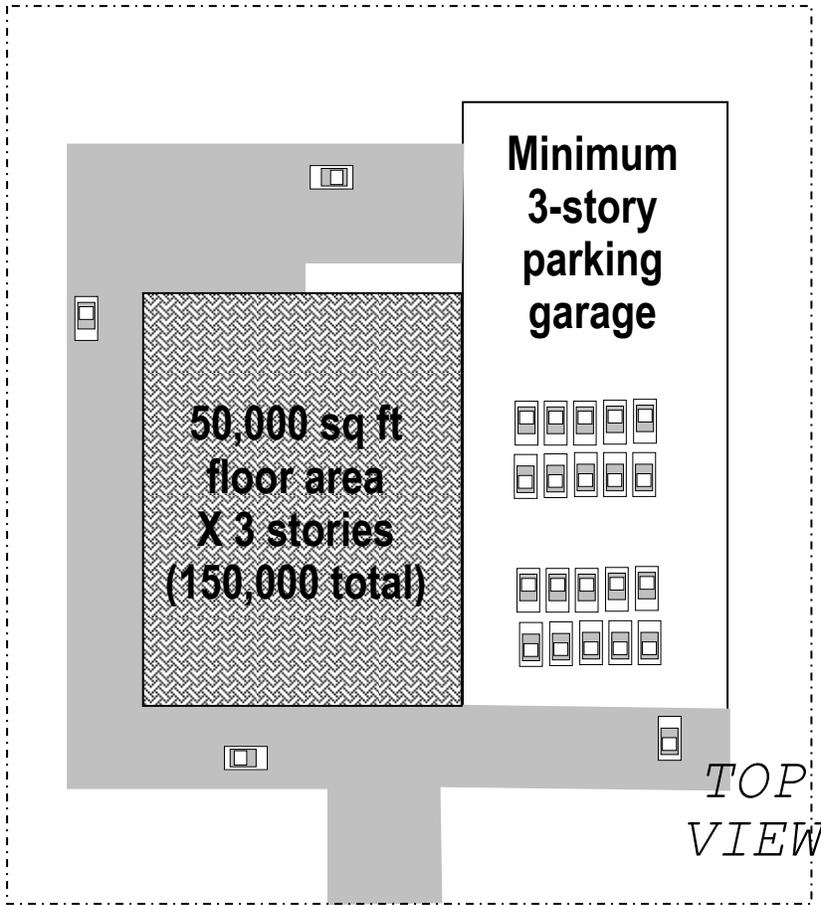
MAXI-MART (150,000+ square feet)

RothPlan

COMMENT:

This size use requires a 3-story building and parking garage thereby reducing:

- lot area (14 to 8 ac)
- lot coverage (75 to 65%) even with increased setbacks.



By imposing mandatory multi-story design, the Township can require commercial lands be used efficiently. Some municipalities use 60,000 square feet (size of local grocery store) as the threshold above which mandatory multi-story design is required. Still others have multiple thresholds where increasing sizes require greater use of multi-story design.

The HC Zones have been sized and configured to allow for coordinated developments and shopping centers that share access drives, off-street parking and loading, signs and stormwater management facilities. Since many of the uses already in place have developed without these shared features, it will take time for this site coordination to spread throughout the area. **Lot coverage requirements should be applied to manage overall development intensity and offer sufficient room for natural stormwater management facilities, landscape strips and interior landscaping. Moreover, the Township could offer a slight lot coverage density bonus for the use of TDRs from the Agricultural Zone.**

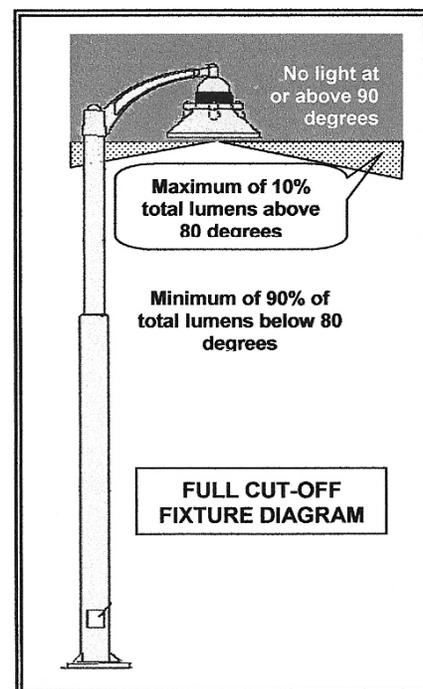
The Township should adjust its zoning regulations that require and/or strongly encourage shared development features. This can be done by limiting access drive locations, waiving setbacks for shared features, providing lot coverage bonuses and other design incentives for shared features. Next local officials must be vigilant in communicating to prospective developers the Township's desire for these coordinated designs as existing businesses seek to change and new ones emerge. These changes should help to improve the function and appearance of adjoining roads including those that act as gateways to the Township and adjoining Boroughs.

Beyond these shared features, other contemporary design features should also be used. First, the use of front yard landscape strips should be required along the road. **These strips will help to define road/site travel lanes and soften the appearance of the roadside and offer shade for pedestrians.** A minimum 10-foot wide landscape strip should be required, along with ornamental shade trees and sidewalks.

Off-street loading spaces and outdoor storage areas (exclusive of outdoor sales) should be screened from the roads and adjoining properties.

Sign standards should reflect the vehicle-oriented customers of the area, but should produce signs that are informative without being loud and obtrusive. It is important that signs be large enough so that motorists can easily read them at prevailing speed limits. The number of signs should be limited so that they do not compete for driver's attention, and the use of coordinated signage is encouraged. **Dynamic message display signs should be carefully regulated so as not to permit any device that distracts motorists.**

On-site lighting of buildings and surrounding areas should employ hooded or screened fixtures that confine glare to the site, and security lighting should be directed toward the building, rather than



the area around it. Security lighting levels should be established to enable the detection of suspicious movement, rather than the recognition of definitive detail.

Public address systems used in external areas should be designed to keep audible impact at ambient levels.

Finally, it is noted that a number of scattered highway-oriented businesses exist throughout the Township. The absence of these uses within the planned Highway Commercial area reflects a vision of the future for the Township where such uses are confined to areas served by public utilities and services. Some of these scattered businesses could be permitted within their respective areas (e.g. Agriculture) as they would be logical uses within those contexts. For example, a country inn or bed & breakfast is an appropriate use within the Agricultural Zone. Similarly, a nursery and garden center can also be justified within an Agricultural Zone. Conversely, many of these uses are not consistent with rural settings unless they are limited in scale as accessory occupations (home, rural and farm occupations). In such cases these uses should be regulated as nonconforming uses.

F. INDUSTRIAL (I & Q) (Industrial, & Quarry/Mining)

Industrial Zone – The Township has an abundance of industry. Overall the Township has five sizable industrial areas. The largest single use is the Conewago Enterprises site located between the Village of Edgegrove and the Hanover Quarry in the northwest corner of the Township. Next several larger industries and smaller uses can be found along Kindig Road and extending north along High Street. North of McSherrystown Borough is a small node of industry straddling Church Street. South of the Preserves along Ram Drive, is another concentration of industry. The final industrial node is located straddling Bletner Street along the Township east central border with Hanover Borough.

During the field survey conducted to prepare the Existing Land Use Inventory in Chapter V of this Plan, it was noted that most of the existing industries should be retro-fitted with improved screening and landscaping. Of particular concern is the need to screen outdoor storage areas from adjoining roads, residences and properties.



Screening should be added for the outdoor storage areas for industry along Ram Drive

It is important to note that limited rural and farm occupations that were observed to be accessory to a principal form or rural residence were not included within this land use category. Instead, these accessory businesses were classified with the principal land use (e.g. farm or residence).

The Industrial Zone is suitable for a wide range of industrial activities that contribute to the well-being of the Township by diversifying its economy and providing valuable employment opportunities. **Zoning should allow for small, start-up business and light industry as permitted uses. However, more intensive uses (listed below) should require the obtainment of a conditional use:**



Trailer storage should be screened from homes across Filbert Street

- Billboards;
- Heavy equipment sales, service and repair, such as excavation machinery, farm equipment, commercial trucks, buses, mobile homes, trailers, and other similar machinery;
- Truck or motor freight terminals;
- Warehousing and wholesale trade establishments;
- Adult-related uses;
- Junkyards;
- Quarries and mines;
- Sawmills;
- Septage and spent mushroom compost processing;
- Slaughtering, processing, rendering, and packaging operations;
- Solid waste disposal, and processing facilities; and,
- Any other industrial activity that presents adverse impact to surrounding areas.

By requiring a conditional use review local officials realize the following benefits:

- (1) require the developer to fully explain the nature of the proposed uses;
- (2) give local citizens the opportunity to express support or concern over the use;
- (3) application of specific criteria aimed at minimizing adverse impact to the community and adjoining properties;
- (4) provide the Township time to engage professional review assistance of the use and its expected impacts; and,
- (5) allow local officials to attach reasonable conditions of approval to mitigate any negative effects of the use.

Regulations should also limit the number of driveway cuts and freestanding signs, and manage outdoor storage, off-street loading and parking. **Design standards should encourage functional, yet attractive, sites when viewed from adjoining properties and**

roads. This involves required landscaping, screening and buffering, and dumpster storage standards.

Lot coverage requirements should be applied to manage overall development intensity and offer sufficient room for natural stormwater management facilities, landscape strips and interior landscaping. Moreover, the Township could offer a slight lot coverage density bonus for the use of TDRs from the Agricultural Zone.

Additionally, prospective industries should demonstrate compliance with all applicable Federal and State operations standards. As described the Township should strengthen its noise and lighting standards to ensure compatibility from one site to the next.

Quarries and Mining - As reported in Chapter V (Existing Land Use) within the extreme northern reach of the Township lies the Hanover Quarry. This massive deep pit operation affords valuable needed building materials locally and offers products that support a variety of industries within the Township and beyond.



Conewago Industries produces pre-cast concrete from materials mined at the adjoining Hanover Quarry.

There appears to be some confusion about whether or not the Quarry is actually located within Conewago Township. This confusion stems from the fact that the Township's adjoining boundary was based upon an historic alignment of the unnamed tributary to the South Branch of the Conewago Creek. The massive excavation that has taken place here has caused this natural watercourse to be diverted to a man-made concrete swale which shifts the original flow further south. In any event, the basemap for this project relies upon the GIS plotting of the historic watercourse and therefore depicts portions of the quarry within the Township. The quarry has provided considerable buffering, screening and berming which protects adjoining areas within the Township from immediate impacts.

Although no new areas are planned, the Township must regulate ongoing operations and their subsequent reclamation. Because of their intensive operations, and potentially detrimental impacts, quarry and mining operations are usually highly controversial.

For this purpose a new Quarry Zone is recommended. This new zone should permit agricultural uses, public uses and utilities, and parks and recreation by right; quarries, mines and processing and/or recycling of mineral materials and solid waste disposal sites should be allowed only through the obtainment of a conditional use. Conditional uses should be strictly regulated with numerous specific use criteria that consider their grave impact on nearby neighborhoods, roads, and the environment.

Finally, all quarrying should be required to at all times demonstrate compliance with the Pennsylvania Noncoal Surface Mining Conservation and Reclamation Act (as may be amended). As part of compliance with this State Act, quarry owners are required to propose a reclamation land use once quarrying operations cease. Local officials should carefully scrutinize such reclamation uses to determine their suitability with long-range comprehensive planning for that locale.

As stated above, this plan only recommends the existing quarry location. Should this use require expansion or a new use be proposed, local officials can scrutinize potential locations via a rezoning hearing process. At the same time, they can review an accompanying conditional use application, thereby streamlining the development approval process.

G. PUBLIC / PRIVATE PARK / PUBLIC PARK / AIRPORT

As reported in Chapter V (Existing Land Use) the Township's public and nonprofit uses have been depicted as they exist to assist in user orientation of the Future Land Use Map. Since zoning regulations that would limit uses to ones of a public nature would be considered confiscatory, it is not recommended that the Township adopt public use zones. ***Rather, these public and quasi-public uses should be permitted within their respective zones as they occur throughout the Township and are depicted on the Future Land Use Map.***

XI. Implementation

The development of this Plan has been an ambitious and educational process. Goals have been deliberately set high and many specific recommendations have been made. But this is just the beginning. The Plan outlines a grand strategy, but action and dogged determination will be necessary if the Plan's goals are to be achieved. This final Chapter will provide a list of tasks that must be undertaken to optimally influence the Township's future.

This strategy will require adjustment to incorporate the Township's various municipal planning tools, including its Zoning Ordinance, Subdivision and Land Development Ordinance and other plans and ordinances. It will also rely substantially on meeting and coordinating with the School District, adjacent municipalities, and public service providers and civic organizations on various planning-related issues.

To operationalize this implementation strategy, the table on the following pages identifies the various tasks to implement, the party or parties responsible for their implementation, and the time line by which the task should initiate. Along with the task, a page number reference appears to direct local officials to the location within the Plan that lists the specific recommendations and supporting analysis. Tasks are chronologically grouped by topic as analyzed within the Plan.

Tasks recommended for immediate action are those that are urgent or can be easily undertaken now. Those that listed for short-term implementation should begin within the next two years or when opportunities arise for earlier initiation. Finally, those tasks slated for long-term implementation may require significant further analysis and additional resources in order to implement them. Ongoing tasks are also noted.

The completion of tasks should be spread out over a several-year period so as not to overwhelm local resources and manpower. If at any time, Township officials determine that certain tasks need attention sooner or beneficial opportunities arise, such tasks should initiate before other priority tasks.

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
Recommendations related to the protection of Introduction. (Chapter I)			
1. It is important for all persons involved and/or interested in the future of the Conewago Township to read and understand this Plan. Local decision-makers should keep the Plan handy when evaluating future development proposals, service adjustments or public investments.	Local staff & officials	ongoing	3

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
Recommendations related to the protection of Natural & Cultural Features. (Chapter III)			
2. Consider working with Hanover Borough Water Department to develop and implement a well-head protection plan.	Board of Supervisors	long-term & ongoing	14-18
3. Prime farm soils and soils of Statewide importance should be protected from conversion to other uses through appropriate planning and zoning.	Planning Commission & Board of Supervisors	ongoing	21
4. Incorporate environmental impact requirements within the zoning and/or subdivision and land development ordinances (SLDO) to protect soils with vulnerable characteristics.	Planning Commission & Board of Supervisors	short term & ongoing	22-23
5. Apply suitable stormwater management and erosion control practices along with riparian buffers to improve surface water quality, especially within designated watersheds of "impaired waters."	Board of Supervisors	short term & ongoing	18, 24-25
6. The Township Zoning Ordinance should be adjusted to require the reporting of waste handling techniques in rural areas associated with concentrated feeding animal operations (CAFOs) and/or other rural and home occupations.	Planning Commission & Board of Supervisors	urgent	18
7. Review the stormwater management ordinance with its engineer and make necessary revisions to incorporate the use of best management practices (BMPs).	Engineer, Planning Commission & Board of Supervisors	short-term & ongoing	18, 27-29
8. Avoid planning future development within wetlands and hydric soils.	Planning Commission & Board of Supervisors	ongoing	25-26
9. Continue to enforce the Township's effective floodplain regulations and stay current on Federal requirements to remain eligible for National Flood Insurance.	Planning Commission & Board of Supervisors	ongoing	26-27
10. Require the preparation of an Environmental Impact Assessment prior to the approval of any new developments or subdivisions within identified natural areas or habitats.	Planning Commission & Board of Supervisors	short-term & ongoing	29-31
11. Adopt forestry management regulations.	Planning Commission & Board of Supervisors	urgent	31
12. Adopt zoning and subdivision and land development standards limiting the removal of trees in sensitive areas, and encouraging the preservation of wildlife corridors.	Planning Commission & Board of Supervisors	short-term	31
13. Monitor the location of the South Branch of the Conewago Creek as it relates to a "champion" white oak tree located at the Hanover Shoe Farm and if applicable adopt protection strategies if located within the Township.	Staff, Planning Commission & Board of Supervisors	ongoing	32

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
14. Consider the benefits of a local voluntary historic preservation program.	Planning Commission & Board of Supervisors	long-term	37-40
Recommendations related to Demographics. (Chapter IV)			
15. Provide for a target mix of housing types to offer greater housing diversity within the Township.	Planning Commission & Board of Supervisors	ongoing	43 & 133-134
Recommendations related to Existing Land Use. (Chapter V)			
16. Resolve zoning interpretation problems associated with hotels versus multi-family dwelling units.	Planning Commission & Board of Supervisors	ongoing	51-52
Recommendations related to the delivery of Public Facilities. (Chapter VII)			
17. Closely monitor growth within the Township so as to proactively plan for facility expansion well in advance of actual demand for space.	School District	ongoing	65
18. Improve the process of residential development review and allocate manpower and resources so as to properly respond to such applications and provide meaningful feedback to the Township.	School District	Short-term & ongoing	65
19. Revise subdivision and land development application requirements so that adequate and timely notification to the School District is assured.	Planning Commission & Board of Supervisors	short-term & ongoing	65
20. Fully cooperate with the School District and contribute resources to the entire parks and recreations system.	Planning Commission, Board of Supervisors & School District	ongoing	65
21. Acquire and develop one centralized community park with at least 80 acres by the year 2020.	Planning Commission, Board of Supervisors	short term and ongoing	66-67
22. Focus its effort on improving the Cheetah Park.	Board of Supervisors	short-term	66-67
23. Use a professional appraiser to derive fair market estimates of residential real estate for the purposes of calculating fees in lieu of mandatory parkland dedication.	Board of Supervisors	short-term	68-69
24. Update and amend its mandatory dedication standards within the SLDO.	Board of Supervisors	short-term	68-69
25. Educate landowners and developers of the importance of riparian buffers, and the Township's intent to provide for them.	Planning Commission & Board of Supervisors	ongoing	72-75

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
26. Recommend that the School District develop and regularly offer a streamside riparian buffer workshop as part of its curriculum.	Board of Supervisors	short-term & ongoing	75
27. Require the installation of riparian buffers for uses that have a potential for generation of surface water pollution as part of its zoning approval process.	Planning Commission & Board of Supervisors	short term & ongoing	75
28. Cooperate with local emergency service providers to enhance strategies for volunteer recruitment, specialized training, education of residents for their financial and manpower support, and exploration of "other" funding mechanisms.	Board of Supervisors, Municipal Officials from the neighboring municipalities & key personnel from local fire & ambulance companies	long term	76-82
Recommendations related to the delivery of Utilities. (Chapter VIII)			
29. Ensure adequate sewage treatment plant reserve capacity to serve its planned stage future growth relying upon growing greener designs that must make use of public sewers.	Board of Supervisors & Municipal Authority	ongoing	88-89
30. Continue to implement the Township's OLDS management program that requires routine pumping-out of septic tanks.	Staff	ongoing	91
31. Add a new Section to the Township Zoning Ordinance relating to the use of on-lot sewage disposal systems that should: <ul style="list-style-type: none"> • Require new uses to test for and reserve two disposal areas (primary and alternate) for sewage on the site to be approved by the SEO; • Permanently protect the reserve disposal site from disturbance until activated; • Allow the enlargement of lot size, beyond specified maximums by conditional use, to avoid an unacceptable level of nitrate-nitrogen in adjoining groundwater to be determined through the DEP sewer module review process; • Enable the use of a sewage effluent dispersal easement, by conditional use in-lieu of enlarged lot area as described above; and, • Require compliance with the Township's recommended On-lot Sewage Disposal System Management Ordinance. • Require properties with on-lot sewers to contain at least one acre to accommodate a primary and replacement disposal site and to identify and protect such alternate disposal site as part of the permit approval process. 	Planning Commission & Board of Supervisors	urgent & ongoing	91, 123
32. Ensure adequate public water supply capacity to serve its planned stage future growth relying upon growing greener designs that must make use of public water.	Board of Supervisors & Hanover Borough Water Department	ongoing	88-89

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
33. Continue to cooperate with the Adams County Solid Waste Authority and participate in the voluntary curbside recycling program.	Board of Supervisors	ongoing	98-100
34. Make use of PA One-Call system with respect to use and developments proposed along the Township's overhead and underground utility rights-of-way.	Residents & developers	ongoing	100
Recommendations related to the delivery of Transportation (Chapter IX)			
35. Act with patience to get State-owned roadway design deficiencies corrected with priority given to roads with higher traffic volumes.	Board of Supervisors & road foreman	ongoing	108
36. Require new developments to improve adjoining road frontages in compliance with required design standards.	Board of Supervisors & road foreman	ongoing	108-109
37. Reduce and discourage the number of driveway cuts along the Township's arterial collector roads.	Board of Supervisors	ongoing	109
38. Encourage joint access with shared parking and loading among adjoining uses.	Board of Supervisors	urgent & ongoing	109
39. Target new and "connected" neighborhoods for local streetscapes that feature grid patterns, pedestrian friendly design, on-street parking, sidewalks and shade trees.	Planning Commission, Board of Supervisors & road foreman	ongoing	109-110 & 117
40. Improve pedestrian linkages between neighborhoods and key locations and activity centers with collector sidewalks.	Planning Commission, Board of Supervisors	long term & ongoing	110 & 117
41. Consider a campaign of road-take back and resurfacing with a gravel surface as a means of improving compatibility and safety while avoiding an inducement to community growth.	Board of Supervisors & road foreman	long term & ongoing	110-111
42. Extend Ram Drive to connect with Mount Pleasant Road.	Planning Commission, Board of Supervisors	long term	115
43. Oversee completion of various local road projects.	Board of Supervisors & road foreman	short term	115-116
44. Partner with the York County Rail Trail Authority and Health Adams County Bicycle / Pedestrian Corporation in seeking a State grant for trail acquisition and design for the Historic Railroad Trolley Trail.	Planning Commission, Board of Supervisors	long term	116 & 117
45. Monitor and scrutinize the County & State's efforts to improve east-west traffic flow from Carlisle Pike through Conewago.	Planning Commission, Board of Supervisors	ongoing	114
46. Continue to apply the Airport Clear Zone for the Hanover Airport to confine local aviation-based uses and regulate structural height.	Planning Commission & Board of Supervisors	short term	118 & 119

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
Recommendations related to Future Land Use. (Chapter X)			
47. Adjust the zoning boundaries of the Official Zoning Map in accordance with those depicted on the Future Land Use Map of this Plan.	Planning Commission & Board of Supervisors	short term	120
48. Commit to updating the Comprehensive Plan by the year 2020.	Planning Commission & Board of Supervisors	long-term	120
<p>49. Create a new Agricultural Zone as depicted on the Future Land Use Map to:</p> <ul style="list-style-type: none"> • Protect and preserves prime agricultural soils in compliance with Section 604 of the Municipalities Planning Code; • Applies a “hands-off” and “by-right” regulatory approach to typical farming and rural uses; • Employs a fixed ratio residential density approach with a maximum permitted lot area with siting standards for future dwelling units proposed that protect sunlight easements/equipment turning radii onto adjoining farms and locate homes so as to minimize land use conflict; • Incorporates flexible residential siting standards to “fit” proposed dwellings in areas most suitable (e.g. flag lots & joint use driveways); • Provides for the possible use of conservation design with community systems; • Includes liberal accessory use regulations that specifically include farm occupations, roadside stands and other rural pursuits, provided that these uses have little impact and that adequate provision is made for the safe disposal of wastes; • Uses separate provisions of concentrated animal feeding operations (CAFOs) that ensure proper siting, operation and disposal of wastes; • Specifically authorizes pre-existing homes as permitted uses; • Includes an Agricultural Nuisance Disclaimer that informs prospective residents of the potential impacts associated with normal farming practices that are protected under the PA Right to Farm Law and the PA Agricultural Security Law and Agriculture Communities and Rural Environment (ACRE), PA Act 38 of 2005; • Require alternate OLDs protection and maintenance and the possible use of conservation design with community systems; • Siting of certain large-scale land uses separated from residential areas; • Identification of the Agricultural Zone as a sending area for transferable development rights (TDRs); and, • A riparian buffer requirement to protect surface water quality. 	Staff, Planning Commission & Board of Supervisors	short term	121-129

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
50. Revise the current SLDO or the Zoning Ordinance to require the preparation of an environmental impact report as a prerequisite to subdivision of new lots.	Staff, Planning Commission & Board of Supervisors	short term	129
51. Revise the zoning ordinance to permit forestry uses by right in every Zone subject to suitable management regulations.	Staff, Planning Commission & Board of Supervisors	urgent	129-131
52. Revise the zoning ordinance to require riparian buffers, where applicable subject to suitable management regulations.	Staff, Planning Commission & Board of Supervisors	short term	130 & 132
<p>53. Create a new Suburban Residential Zone as depicted on the Future Land Use Map that:</p> <ul style="list-style-type: none"> • permits single family detached dwellings; • requires utility in-fill design in areas not served by public sewer and water; • has a base density that can accept TDRs from the Agricultural Zone; • considers the use of a capped utility ordinance; • offers the use of Traditional Neighborhood Design (TND) as a development option; and, • provides for mobile home parks as a conditional use. 	Staff, Planning Commission & Board of Supervisors	short term	136-198
54. Develop a TND ordinance and then sponsor a series of workshops to promote its use and understanding.	Staff, Planning Commission & Board of Supervisors	short term	137-140
<p>55. Create a new Village Residential Zone as depicted on the Future Land Use Map that:</p> <ul style="list-style-type: none"> ▪ permits a target mixture of housing types (e.g. detached, duplex and conversion units); • reflects existing design standards; • permits varied setbacks between existing uses based upon prevailing setbacks; • promotes traditional village styles; • buffers adjoining important natural features, • strengthens accessory use requirements, • reflects historic character, and, • features community and civic uses. 	Staff, Planning Commission & Board of Supervisors	short term	140-142

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
56. Create a new Multi-Family Residential Zone as depicted on the Future Land Use Map that: <ul style="list-style-type: none"> ▪ permits a target mixture of housing types (e.g. detached, duplex townhouses and multi-family dwellings); • reflects high-density design standards; • has a base density that can accept TDRs from the Agricultural Zone; • promotes TND developments; • buffers adjoining important natural features, • offer ready pedestrian access; • provides for efficient parking and/or joint use driveways • strengthens accessory use requirements, • reflects historic character, and, • features community and civic uses. 	Staff, Planning Commission & Board of Supervisors	short term	142-144
57. Create a new Mixed Use Zone as depicted on the Future Land Use Map that: <ul style="list-style-type: none"> • Permits and protects existing residences; • Allows for limited businesses that can be designed and conducted compatibly with adjoining homes by special exception or conditional use; • Deliberately discourages the razing of existing buildings but rather promotes adaptive reuse; • Strictly regulates lot coverage, landscaping, screening, outdoor storage and pedestrian access; • Limit sign sizes and orientation; • Promote shared use of access drives, and off-street parking and loading spaces; and, • Promotes historic character and preservation. 	Staff, Planning Commission & Board of Supervisors	short term	145-146
58. Create a new Village Commercial Zone as depicted on the Future Land Use Map that: <ul style="list-style-type: none"> • Limits types and sizes of uses that are pedestrian-friendly and reflect a local orientation; • Encourage the development of second-story apartments and multi-shop arcades; • Limit sign sizes and orientations; • Promote shared use of access drives, and off-street parking and loading spaces with particular emphasis on common facilities located in the rear yard; • Generally prohibits outdoor storage; • Limits access drives and drive-thru lanes to facilitate pedestrian convenience and safety. 	Staff, Planning Commission & Board of Supervisors	short term	146-149
59. Advertise their willingness to promote revitalization of areas within the VC Zone and challenge local business owners to energize local groups and associations to target the needs of daily commuters and conduct regular and special events.	Staff, Planning Commission & Board of Supervisors	ongoing	148-149
60. Consider a street beautification project that would provide for uniform and ADA-compliant sidewalk designs, street and directional signs, historic lighting fixtures, standard benches, tree grates and trash receptacles.	Staff, Planning Commission & Board of Supervisors	long term	148

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
<p>61. Create a new Highway Commercial Zone as depicted on the Future Land Use Map that:</p> <ul style="list-style-type: none"> • Provides for a wide range of permitted commercial sales and service uses; • Require special exception or conditional use approval for specific uses that pose potential impacts; • Encourage small scale-shopping centers with shared access drives, signage, stormwater management and off-street parking and loading spaces; • Consider mandatory multi-story buildings and parking garages for uses above a local size threshold. • Include lot coverage standards to manage overall development intensity and could offer a slight lot coverage density bonus for the use of TDRs from the Agricultural Zone. 	Staff, Planning Commission & Board of Supervisors	short term	149-153
<p>62. Strengthen the Township screening and landscaping requirements with the potential use of interior rain gardens.</p>	Staff, Planning Commission & Board of Supervisors	short term	149-150
<p>63. Strengthen the Township's general regulations governing impacts and operations.</p>	Staff, Planning Commission & Board of Supervisors	short term	150
<p>64. Strengthen the Township sign requirements with particular emphasis on dynamic message displays.</p>	Staff, Planning Commission & Board of Supervisors	short term	152
<p>65. Create a new Industrial Zone as depicted on the Future Land Use Map that:</p> <ul style="list-style-type: none"> • Provides for a wide range of permitted industrial manufacturing, warehousing, wholesaling, processing, packaging and assembly uses; • Permit small scale light industries by right; • Require conditional use approval for larger and heavier industries; • Encourage shared access drives, signage, stormwater management and off-street parking and loading spaces; • Effectively manage outdoor activities and impacts; • Include lot coverage standards to manage overall development intensity and could offer a slight lot coverage density bonus for the use of TDRs from the Agricultural Zone. • Require compliance with applicable Federal and State operational standards. 	Staff, Planning Commission & Board of Supervisors	short term	153-155
<p>66. Retrofit various existing industries with screening of outdoor storage from adjoining roads and residences over time.</p>	Staff, Planning Commission & Board of Supervisors	Ongoing	153-154

Recommended task:	Responsible Parties	Time-frame	Plan reference (pgs)
67. Create a new Quarry Zone as depicted on the Future Land Use Map that: <ul style="list-style-type: none"> • Acknowledges the existing Hanover Quarry; • Permits rural uses, public uses and utilities and parks by right that can accommodate reclamation; and, • Require conditional use approval for quarries, mines and related processing or recycling plants subject to strict specific criteria that require compliance with PA State law and mitigate adverse impact on adjoining properties; 	Staff, Planning Commission & Board of Supervisors	short term	155-156
68. Permit public and private parks and other public uses within their respective zones as they occur throughout the Township and are depicted on the Future Land Use Map.	Planning Commission & Board of Supervisors	ongoing	156
Recommendations related to Implementation (Chapter XI)			
69. Conduct a formal review of the Plan at least every ten years in accordance with the Municipalities Planning Code.	Planning Commission & Board of Supervisors	ongoing	166
70. Evaluate the Plan's effectiveness and performance against the current "issues of the day" to determine if adjustments or updates are warranted.	Planning Commission	annually	166
71. Monitor the planning programs of nearby communities for the possibility of undertaking a future Regional comprehensive planning process.	Planning Commission & Board of Supervisors	ongoing	167

The preceding table plots an ambitious list of recommended activities. These tasks are vital if the Township is to optimally manage its growth and development and to plan and implement its "vision" for the future. The completion of many of these tasks should result in an improved quality of life within the Township.

Municipal officials are responsible to monitor and evaluate the implementation strategy aimed at achieving the locally-expressed objectives and resultant recommendations set forth in this Plan. ***It is recommended that the Township Planning Commission schedule a regular evaluation of the Plan's effectiveness and performance against the current "issues of the day" on an annual basis to determine if adjustments or updates are warranted. Also the Municipalities Planning Code now requires municipalities to formally review their plans at least once every ten years to determine consistency between local plans, ordinances and County plans; therefore, it is likely that the status of this Plan will be under greater scrutiny than in the past.***

One of the most important advancements in community planning to occur within the recent past involves the Regional allocation of land use. The PA Municipalities Planning Code (MPC) has two applicable sections that enable this technique:

1. Section 811-A. of the MPC specifically authorizes a Regional allocation of land use when a Regional plan is adopted and implemented through a joint zoning ordinance of the participating municipalities. It states:

“Area of Jurisdiction for Challenges. *In any challenge to the validity of the joint municipal zoning ordinance, the court shall consider the validity of the ordinance as it applies to the entire area of its jurisdiction as enacted and shall not limit its consideration to any single constituent municipality.”*

2. Section 916.1(h) of the MPC specifically authorizes a Regional allocation of land use when a Regional plan is adopted and individual zoning ordinances generally implement the Plan. It states:

“Where municipalities have adopted a multi-municipal comprehensive plan pursuant to Article XI but have not adopted a joint municipal ordinance pursuant to Article VIII-A and all municipalities participating in the multi-municipal comprehensive plan have adopted and are administering zoning ordinances generally consistent with the provisions of the multi-municipal comprehensive plan, and a challenge is brought to the validity of a zoning ordinance of a participating municipality involving a proposed use, then the zoning hearing board or governing body, as the case may be, shall consider the availability of uses under zoning ordinances within the municipalities participating in the multi-municipal comprehensive plan within a reasonable geographic area and shall not limit its consideration to the application of the zoning ordinance on the municipality whose zoning ordinance is being challenged.”

While this Comprehensive Plan has been accomplished separately, ***local officials should monitor the planning programs of nearby communities for the possibility of undertaking a future Regional comprehensive planning process.*** This could enable a Regional allocation of all land uses, rather than requiring the Township to provide for all land uses, as is the case in this Plan.

Cooperation among all administrative bodies and levels of government is an essential component to a streamlined and successful implementation strategy. The continued use of public participation is also a very important duty of municipal officials. If, for some reason, the recommendations of this Plan do not appear to address the, then, current conditions, municipal officials should not hesitate to amend portions of this Plan or any other policy to rectify those deficiencies.

This Plan holds a wealth of information that can be easily accessed and understood. Its implementation will help residents, businesses and visitors know the Plan is vital, and that the future of the Township is deliberate, and the result of considerable analysis and public scrutiny.