



Williams Township Comprehensive Plan 2018

Adopted: October 10, 2018

Acknowledgements

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Easton, PA 18042

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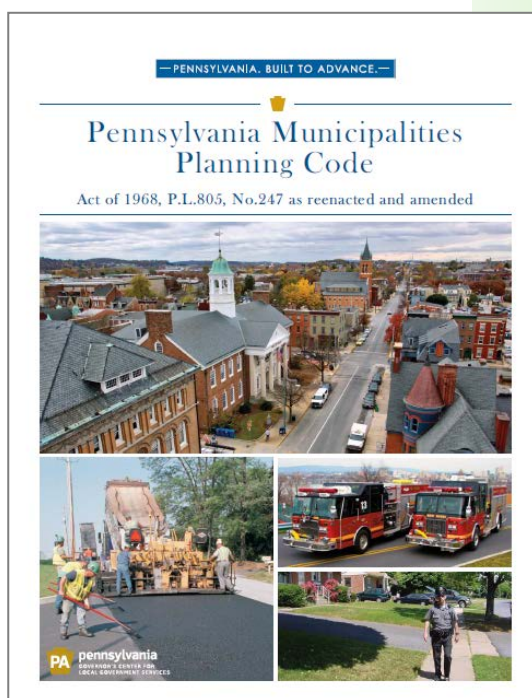
INTRODUCTION

What is a Comprehensive Plan?

A comprehensive plan is a planning tool that serves as the long-range policy vision for a municipality. It is essentially a growth management plan that assesses the municipality's existing conditions, outlines its planning objectives, and provides recommendations and strategies aimed at achieving those objectives. It is enabled by the Pennsylvania Municipalities Planning Code (MPC), Act 247 of 1968, as reenacted and amended. The MPC stipulates that the comprehensive plan must be reviewed every ten years and must include the following elements:

- Statement of Community Development Objectives
- Land Use Plan
- Housing Plan
- Transportation Plan
- Community Facilities and Utilities Plan
- Natural Resources Protection Plan
- Historic Resources Protection Plan
- Statement of the Interrelationships Among the Plan's Components
- Statement of the Plan's Implementation Strategies
- Statement of the Plan's Compatibility with Adjoining Municipalities and the County Comprehensive Plan

As a policy document, the comprehensive plan *guides* future land use and planning decisions. Its recommendations may be implemented through both regulatory means, such as ordinances, and non-regulatory means, such as voluntary community action. It is also used to support applications for grant funding for municipal planning projects or improvement projects. Where zoning is concerned, the comprehensive plan is important in that it provides the rationale for ordinance provisions. Section 603(j) of the MPC states that “zoning ordinances adopted by municipalities shall be generally consistent with the municipal comprehensive plan...”



Implementable Comprehensive Plan

Whereas a traditional comprehensive plan contains a chapter devoted to each of the MPC-required elements listed above, an “implementable comprehensive plan” is organized around priority issues. These priority issues are identified via public input and further examined in the planning process. Recommended means to address the priority issues are practical and workable, and implementation is facilitated by engaging with organizations and individuals that have the capacity to advance the plan’s recommendations.

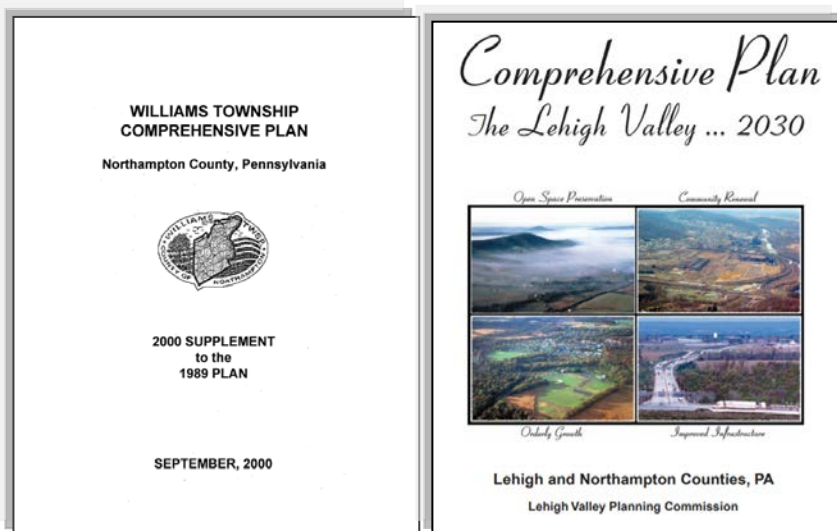
This Williams Township Comprehensive Plan employs a hybrid approach: It is an implementable comprehensive plan that identifies the community’s priority issues and provides feasible strategies for

implementation that engage partners, and it also includes the required elements to ensure compliance with the MPC. The priority issues are defined in Chapter 2 and are addressed by each of the required plan elements.

The Need for a Comprehensive Plan Update

This Comprehensive Plan has been undertaken by Williams Township in recognition of:

- the Township's population growth and demographics (Appendix A) and the need to examine land use changes that have taken place since its 1989 Comprehensive Plan and 2000 Supplement to the Comprehensive Plan;
- the need to reassess the community's goals and vision and define a path forward;
- the need to comply with the MPC's provision requiring a 10-year review of the Comprehensive Plan; and
- the need to align the Township's comprehensive plan with the plan prepared by the LVPC for Lehigh and Northampton Counties entitled *Comprehensive Plan: The Lehigh Valley...2030*.



Accomplishments Since the 1989/2000 Comprehensive Plan

Williams Township has made several accomplishments since its previous comprehensive plan was adopted. Below are the eight recommendations of the 2000 Supplement to the 1989 Comprehensive Plan and their current status:

- Update current Zoning Ordinance and consolidate 1997 amendments. Consider and discuss current regulations regarding: flag lots, private streets, mobile home parks and carbonate geology, driveways, fences, and building permit application requirements.*
 - ✓ This has been an ongoing process. The 2012 Codification included all the prior amendments.
- Update current Subdivision and Land Development Ordinance and specific performance standards.*
 - ✓ Many of the updates have been done. Williams Township is in the process of updating their Well Ordinance.
- Identify, preserve, and protect historic and/or archaeologically significant structures or sites within the Township.*

- ✓ It is recognized that the current list is somewhat dated and should be updated.

4. Prepare a natural resource inventory for the purpose of preserving and protecting significant natural resources.

- ✓ It is recognized that the current list is somewhat dated and should be updated.

5. Identify possible future active and passive recreation sites and work toward implementing a plan to acquire sites to meet the needs of the Township Official Recreation Plan.

- ✓ Williams Township acquired the Melchor Tract in 1999 and completed a Park Master Plan in 2004. The first phase of the Master Plan is currently in design for a paved walking trail and parking lot. In addition, Williams Township negotiated with Chrin Brothers, Inc. to construct Chrin Fields, including baseball and soccer fields with parking lots.

6. Review traffic circulation plan for consideration of improving the network of collector roads. Identify high traffic problem areas and plan to improve traffic safety for intersection and/or roadway upgrades.

- ✓ Williams Township worked with PennDOT for the installation of traffic signals at the I-78 Morgan Hill Road interchange and the Morgan Hill/Cedarville/Industrial Drive interchange. In addition, the Township prompted PennDOT to make several safety improvements along SR 611, including lane boundary rumble strips, which have reduced fatal accidents caused by drifting drivers. More recently, Williams Township conducted a workshop with PennDOT and all current and prospective property owners located along Morgan Hill Road between I-78 and the City of Easton. The focus of the workshop was to coordinate driveway access, future traffic signal(s), and improvements to traffic safety and congestion around the Turkey Hill store and gas station.

7. Prepare and adopt a Township Building Code Ordinance and fire prevention codes to conform with the statewide requirements and to promote proper building construction and fire safety.

- ✓ The Township adopted of a Uniform Building Code and implemented new permit and inspection requirements.

8. Form a task force which will evaluate the further efforts by the Township in promoting Agricultural and Open Space Preservation.

- ✓ This has been one of Williams Township's greatest accomplishments. The Township's citizens passed a referendum to assess a ¼ mill tax for the sole purpose of agricultural and open space preservation. The Land Preservation Board has secured development rights easements on numerous farmlands and open spaces and has matched county and state efforts. Williams Township's Land Preservation program is one of the best of its kind within the Commonwealth. A later referendum repealed the tax because of a surplus of open space funds.

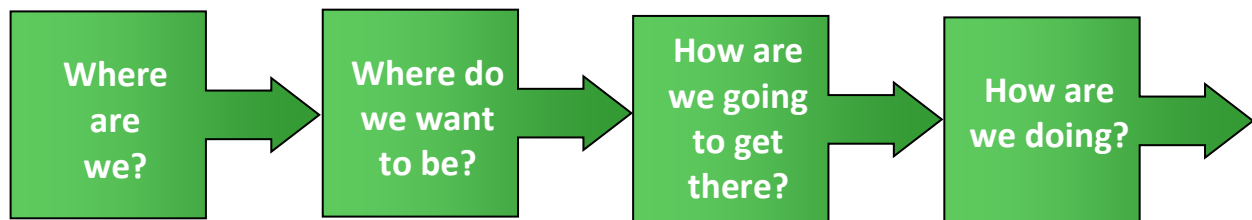
Other noteworthy accomplishments of Williams Township since the 2000 Supplement to the 1989 Comprehensive Plan include:

- ✓ Construction of the Municipal Building and expanded complex
- ✓ Construction of the Public Works Building and complex

- ✓ Successful planning review and oversight of the Morgan Hill Subdivision Planned Community and Golf Course
- ✓ Successful planning review and oversight of redevelopment of vacated LV Black Diamonds baseball stadium into a mixed-use commercial-residential development
- ✓ Numerous public works capital improvements projects, including stormwater conveyance culvert replacement and the Morvale Road Retaining Wall project which protects one of the Township's historic structures

The Comprehensive Plan Process

The comprehensive plan process involves finding the sometimes complex answers to four questions:



1. Where are we?

The first step in the process is the collection and analysis of data that inventories the existing conditions in the community and identifies priority issues. Priority issues – challenges and opportunities facing the township – are identified through a series of public participation events and are examined in detail during the planning process.

2. Where do we want to be?

This step involves the formulation of community development objectives and plans. The objectives are statements of what the community expects to achieve and the plans illustrate the community's vision. Objectives and plans are formulated for each of the comprehensive plan elements and come together to form the community's vision for the future growth of the township.

3. How do we get there?

Implementation strategies provide the specific means to achieve the community's vision. Implementation strategies can involve regulatory measures, such as ordinances, and non-regulatory measures, such as voluntary community action.

4. How are we doing?

The ability of the community to realize its vision depends on its continual use of the comprehensive plan. Williams Township should immediately set out to begin implementing the comprehensive plan's recommendations. The plan's implementation strategies should be reviewed regularly to assess progress toward achieving the community's vision, and the plan should be consulted by township boards before important land use decisions are made.

Public Participation

Public participation is at the heart of this Comprehensive Plan. The Township obtained input from residents about challenges and opportunities facing the Township and ideas for how to move forward into the future. The ultimate goal is to produce a plan that is responsive to residents and achievable within the framework of good planning practice and land use law.

The Williams Township Board of Supervisors appointed a Comprehensive Plan Advisory Committee comprised of representatives of various Township boards and committees and the general public. The Advisory Committee was tasked with preparing the Comprehensive Plan and sought input from residents throughout the process to ensure that key issues of importance to residents are addressed and future plans reflect the community's vision. The Township is hopeful that residents will continue to participate in the Plan's implementation over the coming years.



Township residents participate in public workshop

Work on the Comprehensive Plan began in November 2016. Throughout the process, Township residents were invited to provide input through the various avenues listed below. All meetings and public participation events were advertised via newspaper, the Williams Township website, and email blasts.

Community Survey - A community survey was made available to all residents in January and February 2017. Residents responded to questions on various planning topics pertaining to Williams Township. The survey was mailed to all households and an online version was posted on the Township's website. A total of 2,299 surveys were mailed. The Township received a total of 382 responses—320 completed surveys were returned via mail and 62 surveys were completed online. Assuming each completed survey represents one household, the response rate is 16.6%.

Public Workshops - Two public workshops were held. At the first public workshop, held at the fire house on Morgan Hill Road on the evening of April 6, 2017, residents participated in a hands-on exercise to identify key issues in the Township. At the second public workshop, held on May 3, 2018, residents provided feedback on the draft plan and recommendations.

Comprehensive Plan Advisory Committee Meetings – The Comprehensive Plan Advisory Committee held monthly meetings devoted to development of the comprehensive plan. Meetings were scheduled for the first Thursday of each month and were open to the public.

Planning Commission Public Meeting – The Planning Commission held a public meeting to take public comment on the Comprehensive Plan and to make a recommendation to the Board of Supervisors for the Plan’s adoption. Prior to the public meeting, a copy of the draft Comprehensive Plan was made available for public review at the Williams Township Municipal Building and on the Township’s website.

MPC Review – In compliance with the PA Municipalities Planning Code, the draft Comprehensive Plan was forwarded to contiguous municipalities, Lehigh Valley Planning Commission (on behalf of Northampton County), and the Wilson Area School District for review and comment.

Board of Supervisors Public Hearing - The Board of Supervisors held a public hearing to consider public comment and comments from the MPC-required review, and to consider adoption of the Comprehensive Plan.

Document Structure

This Comprehensive Plan is structured as an implementable comprehensive plan that addresses the community’s priority issues while also meeting the requirements of the MPC. The priority issues are described in Chapter 2. Subsequent chapters include the MPC required comprehensive plan elements, which address the priority issues in detail and contain policy recommendations intended to advance the Township’s planning objectives. An implementation plan, contained in Chapter 9, summarizes the plan’s recommendations and details the actions that should be taken.

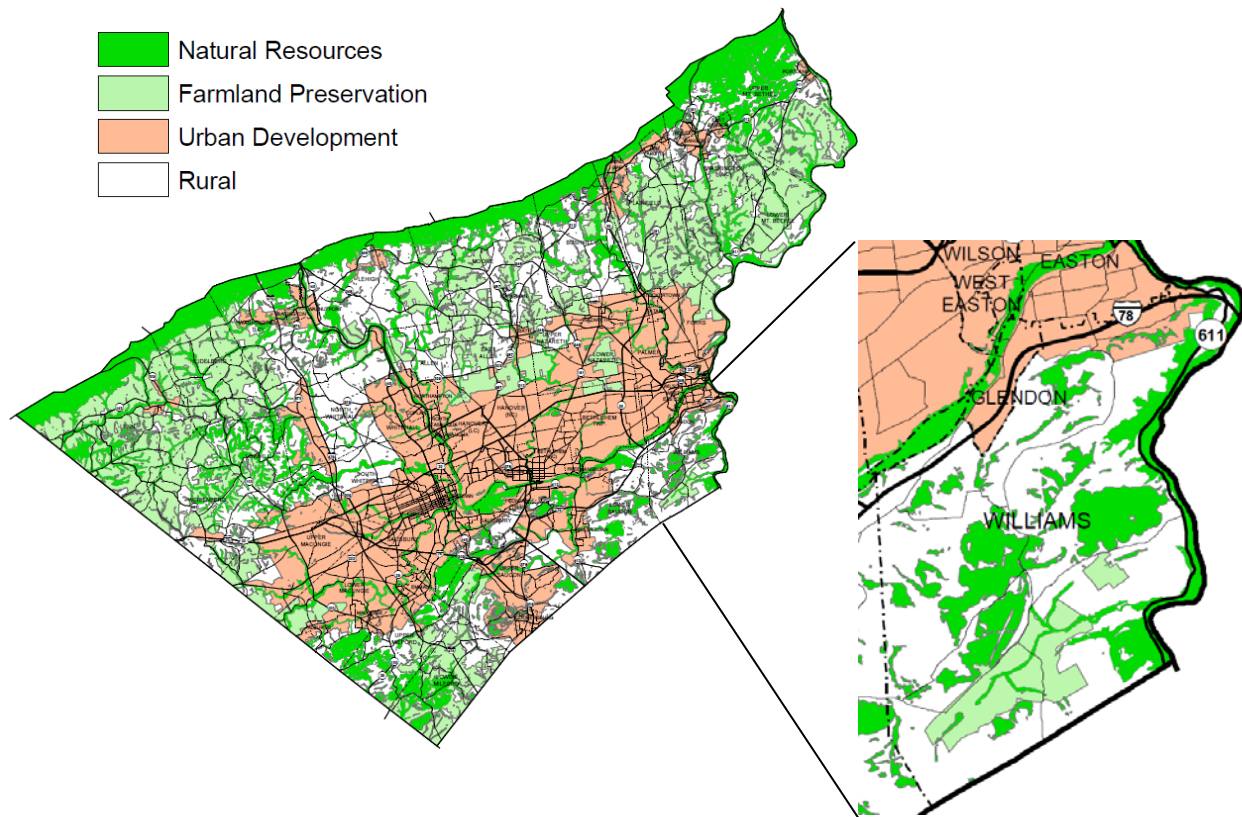
Plan Interrelationships

The various comprehensive plan elements work together to form a cohesive growth management plan for the Township. Future development and preservation of land is coordinated with roads, community facilities, utilities, housing, and natural and historic resource protection. Moderate to high intensity commercial, industrial, and residential land uses are targeted to primarily occur near the I-78 interchange, where there is access to the interstate highway and public sewer and water are available. The plan for low intensity land use throughout the remainder of the Township relates to the lack of public utilities and the rural road network. It is also supportive of natural and historic resource protection. The land use plan supports a mix of housing types, and seeks to maximize accessibility to community facilities and services.

Compatibility with Adjoining Municipalities and County Comprehensive Plan

The existing and proposed development of Williams Township is compatible with the existing and proposed development and plans in contiguous portions of neighboring municipalities. The moderate to high intensity development in the north of the Township is compatible with the City of Easton’s urban character. The Township’s eastern boundary with New Jersey is formed by the Delaware River, and the remainder of the Township is rural and abuts neighboring rural areas.

The existing and proposed development and plans of Williams Township are generally consistent with the objectives and plans of the comprehensive plan prepared by the LVPC for Lehigh and Northampton Counties entitled *Comprehensive Plan: The Lehigh Valley...2030*. The Williams Township Comprehensive Plan reflects the LVPC’s vision of the Township as a rural municipality with its northern boundary planned as an urban landscape. It also contains recommendations for natural and historic resource protection, farmland preservation, transportation, housing, and community facilities and utilities that are consistent with, and supportive of the LVPC comprehensive plan (see figure on next page).



Excerpted from *Comprehensive Plan: The Lehigh Valley...2030, General Land Use Plan*. The Williams Township Comprehensive Plan is consistent with the LVPC's land use plan.

PRIORITY ISSUES

Priority issues were identified through public input and discussions with the Advisory Committee, and further examined during the planning process. They are the issues that are most important to the community and its quality of life, namely, farmland and open space preservation, natural resource protection, and historic resource protection. The three priority issues are closely related, as each contributes to the Township's rural character and scenic beauty, which residents greatly value. The Comprehensive Plan focuses on these priority issues, but also addresses other challenges and opportunities that the Township faces, as well as planning elements required by the MPC.



Welcome sign notes scenic Williams Township

Open Space and Farmland Preservation

This priority issue is discussed in detail in the Land Use chapter of this comprehensive plan. Summary findings include:

- Numerous studies demonstrate the economic value open space derived from its natural services ("green infrastructure"), increased property values, and lower long-term costs to a municipality compared to residential development. Open space also provides opportunities for outdoor recreation, which positively impacts public health and reduces health care costs.
- Williams Township has approximately 6,225 acres of agricultural land and open/wooded lands, comprising just over one-half of the Township's total land area. The Township has pursued an open space preservation program over the last several years with great success. In 2004, voters approved a referendum permitting the Township to purchase farmland and open space with funds raised via an earned income tax. Those funds, along with funds from the state, county, and various land conservancies, have been used to purchase easements totaling 1,045 acres. Another 114 acres have been placed in easements by landowners without the use of Township funds. In a subsequent referendum in 2014, however, residents voted to repeal the open space tax.



Williams Township farmland and open space

- It is estimated that 5,066 acres of farmland and open space remains in the Township. Land to be preserved with Township funds should be prioritized based on criteria that provide an indication of the benefits to be realized by preservation.
- A combination of planning tools is needed to effectively preserve farmland and open space. At this time, the Township favors the use of agricultural and conservation easements and conservation development, which requires 50% of a development tract to be set aside as preserved open space.

Natural Resource Protection

This priority issue is discussed in detail in the Natural Resource Protection chapter of this comprehensive plan. Summary findings include:

- Wooded hills, ridgelines, streams, rivers, meadows, and marshes are definitive features of the Township's rural character and scenic beauty. These resources also provide important economic, health, and recreational benefits to the community.
- The Township contains natural features that are recognized for their sensitive ecological value and national and statewide significance, including several Pennsylvania Natural Heritage Areas and the Delaware and Lehigh Rivers.
- Current protections afforded to natural resources via Township ordinances are relatively strong but should be updated and strengthened to maximize economic, ecological, health, and recreational benefits.



Delaware River



Fry's Run



Wildlife

Historic Resource Protection

This priority issue is discussed in detail in the Historic Resource Protection chapter of this comprehensive plan.

- Many historic homes, barns, mills, and bridges dot the landscape, providing evidence of the Township's heritage and contributing to its rural character, identity, and scenic beauty.
- Historic resource protection can provide economic benefits to the community and enhance its recreation and open space system. Historic resources are also valuable educational resources.

- Williams Township contains several historic resources that are listed on, or have been determined eligible for the National Register of Historic Places and the National Historic Landmarks Program. It also contains numerous resources that are historically significant to the local community, the region, and the state.
- There are virtually no protections in place for the Township's historic resources. Recommendations focus on establishing reasonable historic resource protection measures.



Typical old stone building in Williams Twp

LAND USE PLAN

Preserving the Township’s rural character, which is defined by its open spaces, farmlands, and natural and historic resources, is the foremost important goal of Township residents. The Township has pursued this goal over the years and has had some success. Several large properties – farms and wooded lots – have been preserved in the southern and central parts of the Township through acquisition of agricultural and conservation easements. At the same time, more intensive development has occurred in the north of the Township. But as land in the northern part of the Township gets consumed, development pressure could spread into the Township’s interior in the coming years.

The Township will not be able to rely solely on the purchase of agricultural and conservation easements to achieve its preservation goals; other innovative tools will also have to be employed. At this time, the Township has signaled that, in addition to agricultural and conservation easements, it favors the use of conservation development over other planning tools such as transferable development rights and agricultural preservation zoning. Therefore, this chapter focuses on these two tools as the means to preserve open space while accommodating future development.

Objective

Provide for use of land in a manner that will preserve the Township’s open spaces, farmlands, and natural and historic resources while accommodating development in a manner consistent with existing and planned infrastructure and development patterns. This involves: (1) providing for planned development of the I-78/Morgan Hill Road North corridor, which provides improved traffic safety and appropriate interchange-type commercial development, and (2) providing for low density and conservation development in much of the remainder of the Township.



Farmland and open space in Williams Township



Low density homes in Township's interior



Townhomes near I-78 interchange

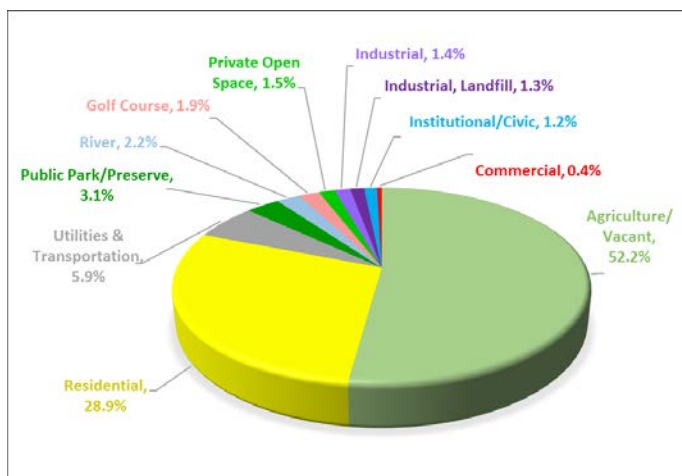
Existing Land Use

Existing land use categorizes each tax parcel according to its predominant land use (Map 1). It represents the way the land is currently being used, not the way it is zoned. The categories in the Table 3-1 correspond to the Existing Land Use map. Tax parcels were categorized based on county tax assessment data from 2017 and verified to the extent possible with aerial photography.

- Agriculture/Vacant is the dominant land use, occupying 52% of the Township's total land area, followed by Residential, which occupies 29%.
- Commercial and industrial land uses occupy a comparatively small portion of the Township's land area. These uses are primarily concentrated near the I-78 interchange.

Table 3-1.

Land Use	Acres	% of Total
Agriculture/Vacant	6225.2	52.2%
Residential	3444.4	28.9%
Utilities & Transportation	702.8	5.9%
Public Park/Preserve	370.8	3.1%
River	262.4	2.2%
Golf Course	227.4	1.9%
Private Open Space	175.9	1.5%
Industrial	170.9	1.4%
Industrial, Landfill	154.6	1.3%
Institutional/Civic	143.2	1.2%
Commercial	44.5	0.4%
Total	11922.0	100%



Land Use Change 1989 to 2017

Tracking land use change since the Township's 1989 Comprehensive Plan is problematic because of differences in mapping technology and land use categorization. Therefore, the figures provided here must be understood to be best estimates (Table 3-2).

- At the time of the Township's 1989 Comprehensive Plan, Agriculture/Vacant lands occupied 7,749 acres. The current acreage of 6,225 represents a 20% decrease (-1,524 acres) in Agriculture/Vacant land from 1989 to 2017.
- It is estimated that 464 acres were converted to residential land use—a 16% increase from 1989 to 2017.
- It is estimated that 631 acres were converted to park, recreation, and private open space uses—a 441% increase.
- Industrial, institutional, and commercial land uses continue to occupy comparatively small acreages.

Table 3-2.

Land Use	1989		2017		1989 to 2017	
	% Land Area	Acres	% Land Area	Acres	Acres Change	% Change
Agricultural/Vacant	65%	7749.3	52%	6,225.2	-1,524.1	-20%
Residential	25%	2980.5	29%	3,444.4	463.9	16%
Utilities & Transportation	>7%	>834	5.90%	702.8	-	-
Parks & Recreation*	1.20%	143.1	7%	774.1	631.0	441%
Industrial	<1%	<119	1.70%	325.5	-	-
Institutional /Civic	<1%	<119	1.20%	143.2	-	-
Commercial	<1%	<119	0.04%	44.5	-	-

Source: Consultant's analysis based on Northampton County Feb. 2017 GIS data

*Parks & Recreation for 2017 includes the Existing Land Use categories Public Par/Preserve, Golf Course, and Private Open Space

Agricultural Easements and Conservation Easements

Approximately 1,159 acres of land on 37 tax parcels are permanently protected via agricultural and conservation easements (Table 3-3). They are shown on the Existing Land Use map as "Private Easement." Nearly all easements are in the "Agriculture/Vacant" land use category.

Development rights on approximately 1,045 acres (of the total 1,159) were purchased using township funds (i.e., funds raised by the Township's earned income tax, which was approved by referendum in 2004) along with funds from the state, county, and various land



Farm preserved by an agricultural easement

conservancies. It is assumed that easements on the other 114 acres were transacted between landowners and the county or a land conservancy without involvement of township funds.

In all cases, the landowners entered into the conservation easements voluntarily. The landowner retains ownership of the property and can continue to use or sell the land, but the owner cannot develop the portion of the property from which development rights were sold. In other words, a landowner may opt to preserve the entire property or preserve only a portion of the property and retain the right to build on the remainder of the property.

Table 3-3.

Easement	# of Parcels	Acres	% of Total Twp Land
Agricultural Easements	18	622.4	5.2%
Conservation Easements	19	536.6	4.5%
Total	37	1,159.0	9.7%
Easement using Township Funds	26	1,044.8	8.8%
Easement without Township Funds	11	114.2	0.9%

Source: Williams Township records, July 2017; Northampton County Feb. 2017 GIS data

Pending and Potential Development

To understand where the Township might be heading, the following discussion examines current development activity in the Township, the potential for additional development based on existing zoning provisions, and potential population and land use impacts associated with this development.

Developments Pending or Under Construction

At the time of this writing, seven approved residential subdivision plans are currently pending construction or are in various stages of construction (Table 3-4). They total 389 dwelling units, including 144 apartments, 163 townhomes, and 82 single-family detached homes. The Township expects these developments to be completed within the next few years. There are no applications for nonresidential development currently before the Township.

Table 3-4.

Subdivision Name	Status	Apartments	Townhomes	Single-Family Detached	Total Dwellings
Cedar Park	Under Construction	144	163	-	307
Island Park Estates	Under Construction	-	-	12	12
School House Farms	Under Construction	-	-	11	11
Roth	Pending Construction	-	-	6	6
Oakleigh Knoll	Pending Construction	-	-	45	45
Valley View	Pending Construction	-	-	5	5
Riverview Woods	Pending Construction	-	-	3	3
Total		144	163	82	389

Source: Williams Township records, Aug. 2017

Estimated Potential Development with Current Zoning (Build-Out Analysis)

A build-out analysis is conducted to estimate the amount of additional development the Township could accommodate if land use policy remained unchanged and the Township developed according to existing zoning parameters. This was prepared for both residential and nonresidential development.

The residential build-out analysis was prepared using geographic information system software (GIS) by estimating the net buildable area for all residentially zoned tax parcels and then multiplying the net buildable area by the permitted zoning density (permitted number of dwelling units per acre). Any existing dwelling units on a parcel were subtracted.

The build-out analysis for nonresidential development uses GIS to estimate the potential additional floor area (building square footage) that could be developed based on the maximum impervious coverage and maximum building height permitted on tax parcels in each nonresidential zoning district.

It is important to note that:

1. The numbers generated by the build-out analysis are estimates based on GIS mapping; they are not based on engineered, parcel-specific development plans, and as such they are estimates of potential development.
2. The build-out analysis does not imply that all of the estimated development will occur, nor does it predict a timeframe for development; some parcels might be developed at some time in the future and some parcels might never be developed.

The build-out analysis estimates that (Table 3-5):

- 1,684 new dwelling units could be developed
- 5.4 million square feet of new nonresidential building floor area could be developed
- Approximately 413,000 square feet of undeveloped land remains in the Solid Waste Zoning District (SWZD); however, this land is almost entirely comprised of slopes in excess of 25%

Table 3-5.

Zoning District	Additional Dwelling Units	Additional Nonresidential Building Floor Area (Sq. Ft.)
A	1,261	-
LDR	366	-
MDR	47	-
SC	10	-
GI	-	2,343,566
HC	-	935,580
LC	-	1,022,863
LI/B	-	771,737
PUCD	-	305,055
Total	1,684	5,378,801
SWZD	-	See 3 rd bullet above

Source: Consultant's Analysis July 2017

Estimated Population Impact

There are 389 dwelling units currently pending or in various stages of construction, and capacity for an estimated 1,684 additional dwelling units if the Township were to be fully developed. It is estimated that the development currently pending or under construction would yield 910 new township residents and the estimated build-out would yield an additional 4,362 residents, for a total population increase of 5,271 (Table 3-6).

Table 3-6.

	# of Apartments	# of Townhomes	# of Single-Family Detached	Total # of New Dwellings	Additional Population*
Pending/Under Construction	144	163	82	389	910
Estimated Build-Out		47	1,637	1,684	4,362
Total	144	210	1,719	2,073	5,271

Source: Williams Township records, Aug. 2017; Consultant's analysis

*Population based on 2010 U.S. Census household size of 2.59 persons per household for owned units and 1.91 persons per household for rental units

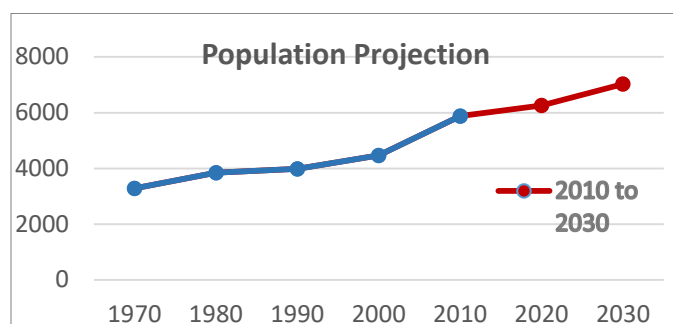
LVPC projects the Township's population at 6,254 by 2020—a 370 person increase over the 2010 Census figure (Table 3-7). It is estimated that of the 389 pending/under construction dwelling units 213 were not yet built as of the 2010 Census. If these 213 units are built and occupied by 2020, it is estimated that the Township's population could reach 6,197, approaching LVPC's 2020 projection and putting it on track to reach LVPC's 2030 projection of 7,025.

At full build-out and assuming all other things being equal, the Township's population could reach 10,500 (6,197 + 4,362) at some time in the future.

Table 3-7.

LVPC Population Projection	2010 Census	2020 Projection	2030 Projection	# Change 2010-2020	% Change 2010-2020	# Change 2020-2030	% Change 2020-2030
Williams Township	5,884	6,254	7,025	370	6.3%	771	13.1%

Source: "The People: Population and Employment Projections 2017," LVPC. www.lvpc.org



Source: "The People: Population and Employment Projections 2017," LVPC. www.lvpc.org

Estimated Land Use Impact – Conventional Subdivision

LVPC projects an increase of 771 persons from 2020 to 2030. Assuming single-family detached housing at 2.59 persons per household, there would be a need for 298 housing units to accommodate this added population. If this development were to occur in the A and LDR zoning districts with 2-acre lots, it would consume at least 596 acres of open land.

In the longer term, the full build-out scenario would have a dramatic impact on land use. A comparison of existing land use and estimated build-out based on conventional subdivision shows that (Table 3-8):

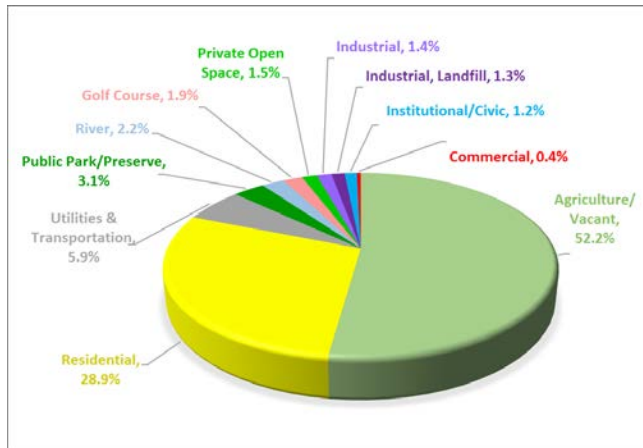
- Residential land use would replace Agriculture/Vacant as the predominant land use in the Township
- Residential land use would increase by 139%, from 3,444 acres to 8,218 acres
- Agriculture/Vacant land would decrease by 78%, from 6,225 acres to 1,369 acres
- Industrial land use would increase by 34%, from 171 acres to 229 acres
- Commercial land use would increase by 55%, from 45 acres to 69 acres

This analysis assumes that all other land uses would remain unchanged, although it is likely that some land would be converted to these uses (e.g. roads, parks, institutional uses) in order to serve the additional population.

Table 3-8.

Land Use	Existing Land Use Acres	Estimated Build-Out Acres	Change in Acres	% Change
Agriculture/Vacant	6225.2	1369.1	-4,856.1	-78%
Residential	3444.4	8218.0	4,773.6	139%
Utilities & Transportation	702.8	702.8	0.0	0%
Public Park/Preserve	370.8	370.8	0.0	0%
River	262.4	262.4	0.0	0%
Golf Course	227.4	227.4	0.0	0%
Private Open Space	175.9	175.9	0.0	0%
Industrial	170.9	228.8	57.9	34%
Industrial, Landfill	154.6	154.6	0.0	0%
Institutional/Civic	143.2	143.2	0.0	0%
Commercial	44.5	69.0	24.5	55%
Total	11922.0	11922.0		

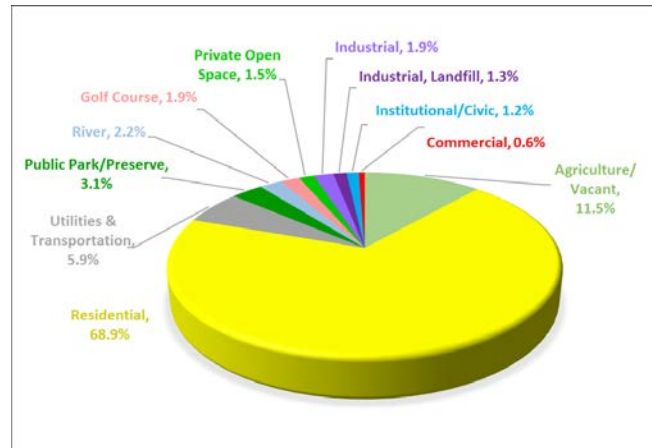
The charts on the next page show that residential land would increase from 29% to 69% of the Township's land area and Agriculture/Vacant would decrease from 52% to 12% of the Township's land area.



Existing Land Use

Residential = 29%

Agriculture/Vacant = 52%



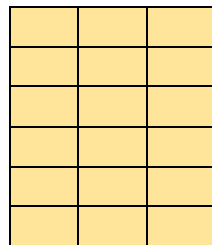
Development with Conventional Subdivision

Residential = 69%

Agriculture/Vacant = 12%

Estimated Land Use Impact - Conservation Development

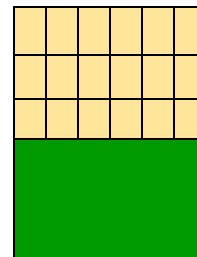
Part 19 of the Zoning Ordinance permits residential development to take the form of a “conservation development.” Conservation development allows the same number of dwelling units as would be built via conventional subdivision, but also sets aside a minimum of 50% of the “adjusted tract area” (ATA) as open space (adjusted tract area is the tract area minus environmental constraints). For example, on a hypothetical 40-acre tract with four acres of environmental constraints, the ATA is 36 acres. The required open space is 18 acres (50% of 36) and the developable land is approximately 22 acres (40 - 18 = 22). The permitted number of lots is 18 (ATA of 36 acres divided by 2 acres per lot = 18 lots).



Conventional Development

18 lots + infrastructure on 40 acres

No preserved open space



Conservation Development

18 lots + infrastructure on 22 acres

18 acres of preserved open space

If it is assumed that new residential development in the A and LDR zoning districts were to take the form of conservation development in accordance with Part 19 of the Zoning Ordinance, then:

- At a minimum, approximately 2,000 acres would be set aside as open space, increasing private open space from 1% to 19% (Table 3-9). Because some of this open space could still be used for farming, a portion of the 2,000 acres could remain as agricultural land.

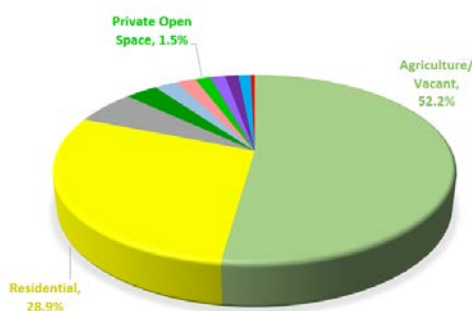
- Residential land would consume 51% rather than 69% of the township's land area, but the permitted number of housing units to be built remains the same, thus protecting landowners' right to develop at the current density of two-acres per housing unit (Table 3-9).

In short, conservation development enables the Township to accommodate future residential growth at the same development density as conventional subdivision (two-acres per housing unit), but preserves more open space and farmland in the process. A farmer can capture some of the development value of the land and retain ownership of a portion of the land to continue farming.

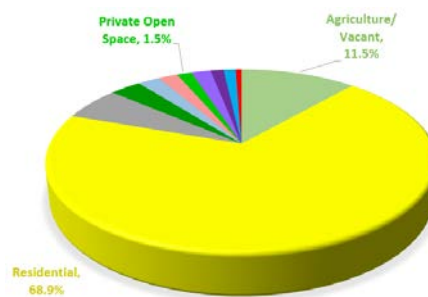
Table 3-9

Land Use	% of Township Land Area		
	Existing Land Use	Estimated Build-Out, Conventional Subdivision	Estimated Build-Out, Conservation Design
Agriculture/Vacant	52%	12%	12%
Residential	29%	69%	51%
Utilities & Transportation	6%	6%	6%
Public Park/Preserve	3%	3%	3%
River	2%	2%	2%
Golf Course	2%	2%	2%
Private Open Space	1%	1%	19%
Industrial	1%	2%	2%
Industrial, Landfill	1%	1%	1%
Institutional/Civic	1%	1%	1%
Commercial	0%	1%	1%

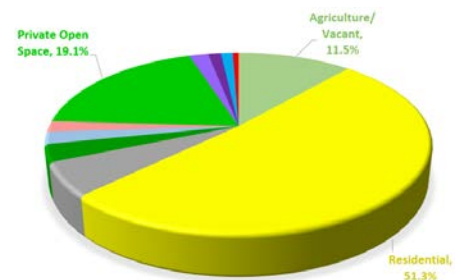
The charts below show that conservation development achieves a balance between open space preservation and development. Agricultural land and private open space would consume approximately 31% of the Township's land area (compared to 14% with conventional subdivision), while residential development would consume approximately 51% (compared to 69% with conventional subdivision), with no reduction in the number of permitted housing units.



Existing Land Use:
 Residential: 29%
 Agriculture/Vacant: 52%
 Private Open Space: 2%



Impact of Conventional Subdivision:
 Residential: 69%
 Agriculture/Vacant: 12%
 Private Open Space: 2%
 # Housing Units = 1,684



Impact of Conservation Development:
 Residential: 51%
 Agriculture/Vacant: 12%
 Private Open Space: 19%
 # Housing Units = 1,684

Future Land Use Plan

Overall Future Land Use Plan Concept

The future land use plan seeks to retain the Township's rural character by preserving farmland and open space in generally the southern portion of the Township while steering development to areas that have, or could be improved to have adequate infrastructure capacity, emergency service access, and community facilities. The Agriculture and Low Density Residential Areas are the focus of farmland and open space preservation and low density development. Areas near the I-78 interchange, which are also proximate to urban amenities in Easton, are the focus of commercial, industrial, and moderate-to-high density residential development. The area immediately surrounding the municipal complex is envisioned as a potential town center that would enable residents to walk to the township park, township building, elementary school, and fire station.

The Future Land Use Plan addresses the Priority Issues via the following:

- Open space and farmland preservation will be achieved through: (1) conservation development which provides for a 50% open space set aside in residential developments in the A and LDR zoning districts (currently permitted in the zoning ordinance) with farm lots permitted in the open space; and (2) purchase or donation of conservation easements and agricultural easements.
- Subdivisions and land developments will protect natural resources in accordance with the Township's natural resource protection ordinances. Where conservation development is utilized, natural resources will be protected by inclusion in the open space area to the maximum extent possible.
- Historic resources located on a development tract can be adaptively reused and/or protected and maintained within the development.

In addition:

- All new development will be required to provide sidewalks/pedestrian paths; new residential development will also be encouraged to provide for bicycle access and on-site neighborhood recreation.
- All new development will minimize driveways and curb cuts to/from adjoining arterial and collector roads.

Descriptions of Future Land Use Areas

The following descriptions of the future land use areas correspond to the Future Land Use map (Map 2)

Agricultural and Low Density Residential Areas: Containing picturesque farmland, open spaces, and historic buildings, these areas epitomize the Township's rural character that residents greatly value and wish to preserve. They are also economically, environmentally, and culturally important: active farms provide a livelihood for local farmers and associated businesses across the region; large tracts of land contain critical natural resources, including the slopes, woodlands, wetlands, and streams that make up

the Fry's Run High Quality Watershed and the Cook's Creek Exceptional Value Watershed; and historic buildings provide a connection to the area's heritage and add to the Township's scenic beauty.

While these qualities warrant preservation, a network of rural roads with low traffic capacity, a general lack of community facilities, and very limited access for emergency services also make the Agricultural and Low Density Residential Areas less suited to development. Further, any development that occurs in these areas requires individual wells and on-lot septic disposal systems, and as development increases so do potential risks to the potable groundwater water supply.

- **Agricultural Area** - For the reasons stated above and because it contains the Township's active farms and high-quality agricultural soils, land use policy in the Agricultural Area will be primarily concerned with preserving agricultural land and soils, protecting farming as a viable use and economic endeavor, and preventing or mitigating conflicts with non-agricultural uses. Open space preservation will also be pursued in the Agricultural Area as a means to protect the Township's rural character, and natural and historic resources, including its exceptional value and high quality watersheds. Accommodation will be made for low density residential development that enables the continuation of farming, minimizes the loss of prime farmland soils to non-agricultural uses, and sets aside open space. The Township favors purchase of development rights in combination with conservation development over agriculture protection zoning and transferable development rights as a means to preserve land in the Agricultural Area.
- **Low Density Residential Area** - In order to preserve the Township's rural character, natural and historic resources, and agricultural land and soils, land use policy in the Low Density Residential Area will pursue open space preservation as a primary objective, while also protecting agricultural land and soils and accommodating low density residential development. The Township favors purchase of development rights in combination with conservation development over transferable development rights as a means to preserve land in the Low Density Residential Area.

With any residential development that occurs in the Agricultural Area or Low Density Residential Area, historic resources will be adaptively reused and/or protected and maintained within the development and accommodation for trails and neighborhood recreation will be strongly encouraged. Designated open space areas will be also be required to connect to adjoining tracts so that a township-wide greenway network can be established.

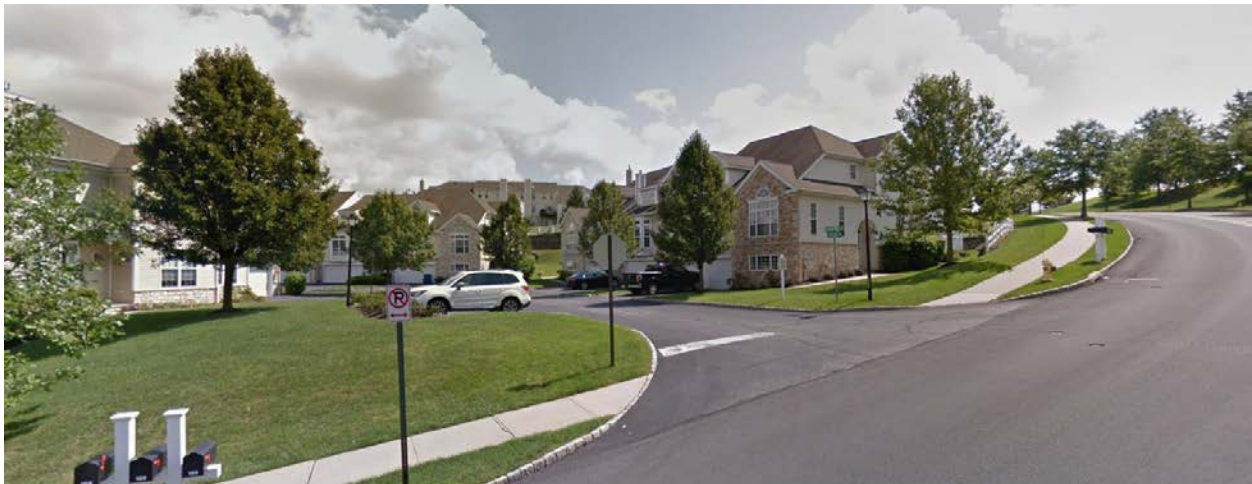


Land in the Agricultural Area



Commercial and Office Area: Is located in the north of the Township surrounding the I-78 interchange. It currently hosts a handful of residences and several mid- to large-scale commercial establishments, including three fireworks outlets, a five-unit strip shopping center, a self-storage facility, an auto salvage facility, and a convenience store. Because it has direct access to I-78 and is served by public sewer and water, this area is intended to accommodate highway oriented commercial and office uses.

Commercial/Office and Moderate to High Density Residential Area: Is located in the north between I-78 and Cedarville Road, and is the sight of the Abington Manor senior living community and the adjacent Cedar Park apartment and townhome development. With access to I-78 and PA 611, and having public sewer and water service, this area is intended to provide for commercial, office, townhome, and multi-family uses. Establishment of a pedestrian and bicycle path connecting residences to commercial services and offices on Cedarville Road and Industrial Drive (i.e., extending to Pop's Kitchen and Taproom) will be encouraged.



Townhomes in the moderate density Morgan Hill development

Light Industrial/Business Area: Is located on the Township's northern boundary near the I-78 interchange and along a portion of Berger Road. It currently contains a handful of mid-sized businesses and several residences. This area is intended to accommodate light industrial uses and related and limited commercial uses contained in a cohesive development with common design and landscaping and with buildings at a scale and character consistent with the Township's rural architectural vernacular. The portion near the I-78 interchange is served by public sewer and water; however, the area at Berger Hill Road is not, so future light industrial or business development might necessitate the extension of public sewer and water or installation of a private/community system.

Industrial Area: Is located on the Township's northern boundary near the I-78 interchange and along the Lehigh River at Island Park Road. This area is currently home to several relatively large-scale businesses. It is intended to provide for a wider range of industrial uses than the Light Industrial/Business Area. The portion near the I-78 interchange is served by public sewer and water; however, the area at Island Park Road is not, so future industrial development might necessitate the extension of public sewer and water or installation of a private/community system.

Sanitary Landfill Area: Is located near the I-78 interchange. This area recognizes the existence of the Chrin Brothers Sanitary Landfill at this site. The landfill is expected to continue its operations here through the duration of its current permit, which expires in January 2020. An application is before the PA DEP for an expansion of the landfill that would include approximately 25 acres to the east of the current landfill permit area and extend its life by approximately ten years beyond the current year 2020 permit. At the time of this writing, the PA DEP had not yet reached a decision on the permit application.

Local Commercial Area: Is designated in two locations: (1) on Morgan Hill Road, and (2) at the intersection of Island Park and Berger Roads. A handful of local businesses are in operation at these locations alongside residential uses. This area is intended to accommodate small-scale commercial establishments that provide goods and services to the local neighborhood. Building design within this area should be compatible with the surrounding rural character and the rural village character of existing nearby residences.

Special Conservation Area: Is comprised of the lands of the Mariton Wildlife Preserve and land adjacent to the Delaware and Lehigh Rivers, including the river floodplains. To minimize hazards associated with floodplain development, protect floodplain resources, and protect the natural resources of the Mariton Wildlife Preserve, this area is intended to accommodate only open space and low impact recreational uses.

Potential Town Center: (Red rings around municipal complex of ¼ mile, ½ mile, and ¾ mile radii) The municipal complex, elementary school, and fire station are envisioned as the central community facilities around which a walkable town center could be established. The town center could be comprised of residences and limited, small-scale retail and service establishments (such as a small food market, café, and/or similar neighborhood-oriented use) designed to serve the local community. Residents would be able to walk to the existing municipal building and park, school facilities, and fire station.

Highway Interchange Area Planning Guidelines

The Township's previous comprehensive plan contained a section on highway interchange area planning guidelines, and the Township zoning ordinance makes reference to those guidelines. This current comprehensive plan incorporates those guidelines, which are included in Appendix B.

Future Open Space Preservation Opportunities

Value of Open Space

Numerous studies demonstrate the value open space in terms of natural services, increased property values, and decreased costs to local governments over time. Open space also provides opportunities for outdoor recreation, which positively impacts public health and reduces health care costs.

Lehigh Valley Return on Environment highlights the many economic, environmental, and public health benefits that open space and natural areas provide the region. It asserts that: "These benefits, however, are generally not well-understood and are often undervalued in policy debates and investment decisions. Beyond their intrinsic value, open space and nature (i.e., forests, wetlands, meadows and farmland) provide these vital services free of charge. Once lost, natural system services are costly, and difficult or impossible to replace."¹ The study also states that: "The economic benefits generated by open space

¹ "Lehigh Valley Return on Environment," 2014, pg. 1.

accrue in different ways—some are direct revenue streams to individuals or governments, some represent asset appreciation value, and some accrue in the form of avoided loss.”²

Findings from a small selection of studies follow:

- **Economics** – Open spaces and the natural features they contain help to form a community’s “green infrastructure,” which provides natural water and air cleansing, carbon sequestration, erosion control, and flood control services. When left intact, open spaces and natural areas perform these services which would otherwise have to be artificially replaced and paid for. They also help avoid healthcare and other related costs. *Lehigh Valley Return on Environment* found that:
 - The value of **natural services** performed by open space and natural resources for water supply, water quality, flood control, pollination, biological control, habitat, and soil formation/retention is estimated at **\$355.5 million** or more each year in the Lehigh Valley.
 - The value of open space and natural resources as they relate **air quality** and carbon storage is estimated to be **\$54 million** each year in the Lehigh Valley.
 - Open space and natural resources provide **outdoor recreational** opportunities, which generate an estimated **\$795.7 million** of expenditures in the Lehigh Valley, **9,678 jobs**, and \$58.9 in state and local taxes.
- **Property Values** – Open space increases property values.
 - The average premium added to each home located within ¼ mile of protected open space is **\$14,600** in the Lehigh Valley. This equates to a total real estate premium of **\$1.8 billion**.³
 - The National Association of Home Builders estimates that parks and recreation areas can increase the value of nearby building sites by **15-20%**.⁴
- **Reduce Costs to Local Government** – *Opportunity Knocks – Open Space is a Community Investment* finds that **investment in open space becomes a cost savings to the municipality after a short break even period** when compared to developing that same land for residential use. Using data for Bucks County, the study examines the cost of a development in terms of public school costs and finds that the cost of the development exceeds the revenues it generates, resulting in a \$273,834 shortfall every year. If the same land were preserved as open space via purchase of a conservation easement at a cost of \$1.7 million, the municipality would recoup its investment within 6.2 years ($1.7\text{million} / 273,834 = 6.2$ years) and the land would become a cost savings thereafter.⁵ Similar studies have been conducted across the region with similar results.

² Ibid.

³ Ibid.

⁴ Kerlinger, Paul, “Economics of Open Space Conservation,” 2011

⁵ “Opportunity Knocks – Open Space is Community Investment,” Heritage Conservancy, 2011

Potential for Open Space Preservation in Williams Township

The Township cannot rely on one open space preservation strategy alone; a combination of strategies will have to be employed. At this time, the Township favors the use of agricultural and conservation easements along with conservation development (which requires 50% of a development tract to be set aside as open space) to preserve open space.

According to the existing land use analysis, the Township has approximately 6,225 acres of agricultural and vacant/open/wooded lands, of which 1,159 acres are in easements. The remaining 5,066 acres represents land that could still be preserved.

	Acres
Agricultural/Vacant Land	6,225
Current Ag. and Conservation Easements	(1,159)
Remaining Land for Potential Farmland/Open Space	5,066

The Township does not have the financial resources to preserve all 5,066 acres of remaining farmland and open space by purchasing easements, so its efforts should be focused on lands that would yield the greatest benefit to the community. To that end, the Township should engage in a process to prioritize land for preservation. Such prioritization could be based on criteria such as the land's development potential; the long term cost savings to be realized through preservation the property; the presence of significant agricultural, natural, or historic resources; the disposition of adjacent land; the potential to facilitate a trail connection; the potential to fill a recreational need; and so on.

Enabling the use of conservation development will augment the Township's preservation efforts, while also allowing landowners to capture the development value of their properties. The Future Land Use plan advocates the use of conservation development (permitted by Part 19 of the zoning ordinance) as a means to preserve open space within residential developments in the Agricultural and Low Density Residential Areas. Assuming all open land in these areas were to develop with conservation development, approximately 2,000 acres of land would be preserved. However, unless the Township amends its zoning ordinance to provide an incentive for use of conservation development and make any necessary adjustment to ensure it is feasible, it cannot assume that any land will be preserved in this way.



View across southern portion of Williams Township

Recommendations

The Township's main land use objective is to protect the community's farmland, open space, natural, and historic resources while accommodating a variety of residential, commercial, industrial, and institutional uses. This involves preserving resources and enabling growth and development in a form and pattern that is consistent with this rural community and its limited infrastructure.

The Township has indicated that it wants to pursue this goal primarily through conservation development and purchase of development rights from farms and open lands. It also wants to continue to permit moderate and high density residential and nonresidential development in the area near the I-78 interchange where infrastructure exists or is nearby. The Township's zoning ordinance, which guides land use, supports this development pattern, but is in need of adjustments to some language to ensure it reflects the community's development and conservation objectives. The recommendations below emphasize ways to increase the use of the Township's conservation development provisions; they also support continued purchase of easements, the creation of a walkable town center near the municipal complex, and moderate to higher intensity development in the north of the Township.

Recommendations are listed below. These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion.

- Review, and if necessary amend the zoning ordinance Part 4 (Agricultural District), Part 5 (Low Density Residential District), and Part 19 (Conservation Development) to:
 - Make it clear that conservation development is an optional use
 - Create additional incentive to encourage the use of conservation development
 - Ensure that the required open space percentage, required minimum lot size, and required on-lot water and sewer do not preclude the use of conservation development
 - Consider reducing the minimum lot size for conservation development and permitting septic disposal in part of the open space or via a community septic system so that more open space can be preserved
 - Ensure that an appropriate amount of the required open space in conservation development can be used for recreation or similar community use
 - Ensure that critical natural resources are protected within the dedicated open space area of conservation developments
- Review, and if necessary amend the zoning ordinance Part 15 (Environmental Preservation Required) to clarify which subsections apply to conservation development and which subsections apply to conventional subdivision. For example, does the calculation of "adjusted tract area" and "base density" apply to conventional subdivision plans? Do the "steep slopes" regulations apply to conservation development?

- Amend the SC – Special Conservation District to permit only those uses that are compatible with conservation (i.e., consider removing golf courses and residential development).
- Amend the zoning ordinance to permit mixed use in the LC- Local Commercial District (i.e., residential and commercial use in the same building, such as a retail or office use on the first floor and an apartment on the second floor).
- Amend the zoning ordinance to enable creation of the Potential Town Center Area.
- Continue to provide for moderate to high density residential development, and commercial and industrial land use in the northern portion of the Township near the I-78 interchange.
- Review and amend the SALDO to ensure consistency with the Zoning Ordinance’s conservation development and other provisions
- Charge the Land Preservation Board with the task of systematically identifying and prioritizing land for preservation using a prioritization scheme similar to that discussed on the previous page. Once identified, conduct outreach and education to landowners on topics of agricultural easements, conservation easements, and development rights.
- Continue to utilize dedicated Township funds for the preservation of farmland and open space and continue to partner with the state, county, and land conservancies.
- Hold a referendum on reinstatement of the Earned Income Tax for the purpose of funding open space preservation.

NATURAL RESOURCE PROTECTION PLAN

As evidenced by public input and results of the community survey, Williams Township's natural resources are highly valued by residents and their protection is an important goal. Wooded hillsides and steep ridges, streams, rivers, and meadows are intrinsic to the Township's rural character and scenic beauty. Natural resources also perform critical ecological functions and provide important economic, health, and recreational benefits to the community. They are also strong determinants of land use, often limiting the ability to develop due to potential natural hazards.

Objectives

- Protect natural resources for their economic, health, and recreation benefits and for their contribution to the Township's rural character and scenic beauty.
- Establish a connected network of natural resource features that will provide a healthy and functioning natural infrastructure system ("green infrastructure"), protect habitats, and facilitate wildlife movement.

Benefits of Natural Resource Protection

In addition to their ecological values, protection of natural resources provides many benefits to the Township:

- **Economics** – Natural resources are considered "green infrastructure" because of their water and air cleansing, carbon sequestration, erosion control, and flood control properties. Natural resources and open spaces, left intact, perform services that would otherwise have to be artificially replaced and paid for. They also help us avoid healthcare and other related costs. A 2014 study entitled *Lehigh Valley Return on Environment* found that¹:
 - The value of **natural services** performed by natural resources and open space for water supply, water quality, flood control, pollination, biological control, habitat, and soil formation/retention is estimated at \$355.5 million or more each year in the Lehigh Valley.
 - The value of natural resources and open space as they relate **air quality** and carbon storage is estimated to be \$54 million each year in the Lehigh Valley.
 - Natural resources and open space provide **outdoor recreational** opportunities, which generate an estimated \$795.7 million of expenditures in the Lehigh Valley, 9,678 jobs, and \$58.9 in state and local taxes.
 - Natural resources and open space lead to increased **property values**. The average premium added to each home located within ¼ mile of protected open space is \$14,600 in the Lehigh Valley. This equate to a total real estate premium of \$1.8 billion.

¹ "Lehigh Valley Return on Environment," http://lvpc.org/pdf/2014/ReturnOnEnvironment_Dec_18_2014.pdf

- **Public Health** - Protection of natural resources contributes to better air and water quality and provides opportunities for outdoor recreation, which positively impacts public health and reduces health care costs.
- **Recreation** – A connected network of natural resources presents opportunities for outdoor recreation and can provide connections to various destinations within and beyond the Township's boundaries.
- **Community Identity and Rural Character** – Natural resources contribute to the rural character and scenic landscapes that Township residents so deeply value.

Williams Township's Natural Resources

The following natural resource inventory includes features that are most consequential to land use in Williams Township. These features are: geology, steep slopes, floodplains, watersheds and surface water, soils, wetlands, core habitat, and woodlands.

Geology

Williams Township lies within the Reading Prong Section of the New England Province and the Great Valley Section of the Ridge and Valley Province. These are land classifications based on geological formations and topography.

The Reading Prong Section, characterized by rounded hills and ridges, forms the Township's hilly terrain and steep slopes. Part of the Pennsylvania Highlands, these hills extend into New Jersey, New York, and Connecticut linking the Blue Ridge and Berkshire Mountains. The hill tops and steep slopes of this Section frame much of the Township's scenic beauty and remain largely undeveloped.

The Great Valley Section forms the northern boundary of the Township along the I-78 corridor, much of the eastern boundary along the Delaware River, and the Frys Run and Browns Run stream valleys. It is dominated by limestone and dolomite



Hexenkopf Rock

bedrock (i.e., carbonate rock), which underlay these parts of the Township. These rock types produce well-drained, fertile soils, so it is no coincidence that nearly all of the farmland in the Township is located in the Great Valley Section. Because of their drainage properties, limestone and dolomite also present an elevated risk for groundwater contamination and are susceptible to sinkhole formation.

Hexenkopf Rock and Elephant Rock are well-known outstanding geologic features in the Township.

Current Protection Measures – Geology

- Part 13 of the Williams Township SALDO regulates land development activities in areas of carbonate geology to minimize the risk of sinkhole development in areas of new development

and on lands adjacent to these developments. Single family homes and the alteration of single family homes to include detached structures are exempt.

Recommendations

- Consider expanding sinkhole/carbonate geology regulations to all development activity in carbonate areas, rather than new development only. This would include single family homes and the alteration of single family homes to include detached structures.
- Conduct a review of sinkhole/carbonate geology ordinance regulations to ensure they are up to date and adequate.
- Pursue protection of Hexenkopf Rock and Elephant Rock by including them in public or private open space

Steep Slopes

Williams Township sits atop a hill that forms a southern ridge of the Lehigh Valley and a western drainage of the Delaware River. Large areas of steep slope that form these ridges are present in the north of the Township along the I-78 corridor and in the east along the Delaware River, and reach into the Townships interior (Map 3).

Because steep slopes typically have shallow soils, they are particularly vulnerable to erosion, especially when natural vegetation, which holds the soil in place, is disturbed. Maintaining vegetated slopes provides a natural system of erosion prevention, minimizes stormwater runoff and water pollution, provides wildlife habitat, and contributes to air quality.

Current Protection Measures – Steep Slopes

Steep slopes receive some protection via the Township’s zoning ordinance, which requires an increase in lot size when a building, driveway, or area within 25 feet of building or driveway are in a steep slope area. The ordinance also limits the amount of steep slope area that can be disturbed, but this applies only to commercial, industrial, and institutional uses.

Recommendations – Steep Slopes

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Permit only low-impact, conservation oriented land uses in areas with slope over 25%.
- Make the steep slope disturbance limits applicable to all land uses
- Decrease the steep slope disturbance limits (i.e. lower the percentage of allowable disturbance)
- Specify limits for impervious cover in steep slope areas

Floodplains

Floodplains are formed along streams by the shifting of stream channels as they meander through valleys. Naturally vegetated floodplains are important for flood water storage, flood flow conveyance, stream channel formation, water quality, and wildlife habitat. Disturbance of floodplains alters their natural functions and increases the risk of damage to property and human life. Impervious cover and inadequate stormwater management can also cause an increase in flood heights and downstream flooding.

Areas of 100-year floodplain are delineated along the Delaware and Lehigh Rivers, Frys Run, Browns Run, and at the foot of Morvale Road (Map 3).

Current Protection Measures – Floodplains

The Township SALDO contains floodplain provisions, which might conflict with the zoning provisions. The zoning ordinance contains floodplain regulations; however, the regulations:

- Conflict with the Special Conservation (SC), Low Density Residential (LDR), and Agricultural (A) districts by permitting uses that are not permitted in those districts
- Permit “development which may endanger human life,” hospitals, nursing homes, jails or prisons, and manufactured homes in parts of the floodplain
- Allow uses permitted in SC, LDR, and A districts to be built in the floodplain
- Contain setbacks of 50 feet, which are less than, and may be in conflict with other stream/river/canal setbacks in the ordinance
- Rely almost exclusively on the Floodplain Administrator (i.e., Zoning Officer) to review and approve permit applications for development in the floodplain.
- Permit alteration or relocation of watercourses
- May not protect historic resources that are locally designated due to a strict definition of locally designated historic resources.

Recommendations – Floodplains

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Continue to ensure that floodplain regulations comply with at least the minimum federal and state requirements
- Amend the zoning ordinance so that the floodplain regulations apply as an overlay district, and specify which uses are permitted in the floodplain area
- Consider prohibiting new structures and fill in the 100-year floodplain, except for certain necessary infrastructure (consistent with the County’s comprehensive plan). At most, allow new

structures and fill only by variance and only when the applicant demonstrates that the impact on flood heights and velocities, when combined with all other existing and anticipated development in the watershed (i.e., cumulative impact), can be adequately offset

- Prohibit “development which may endanger human life,” hospitals, nursing homes, jails or prisons, and manufactured homes in the floodplain
- Strictly limit impervious cover in the floodplain
- Ensure setback requirements in the floodplain are consistent with other stream/river/canal setbacks in the ordinance
- Review the SALDO’s floodplain provisions to make sure they do not conflict with the zoning provisions

Watersheds and Surface Water

A watershed is an area of land that drains into a common stream or waterbody. Watersheds are defined by drainage divides (ridgelines), which direct surface water runoff and groundwater down the hill side and into the common stream or waterbody.

Watersheds in Williams Township are shown on Map 4. The area generally east of Morgan Hill Road drains directly into the Delaware River. Much of the southern portion of the Township, including its farmlands, drains into Frys Run, which then empties into the Delaware River. The area along the Township’s southern and southwestern boundary drain into Cook’s Creek and the East Branch Saucon Creek, and the northwestern portion of Township drains into the Lehigh River.

Current Protection Measures – Watersheds and Surface Water

- Pennsylvania *Chapter 93, Water Quality Standards* – Chapter 93 establishes water quality use designations for all surface waters in the state and specific water quality criteria necessary to protect those uses. Water quality uses include aquatic life, recreation, and water supply.

Chapter 93 also classifies surface waters meeting certain criteria as High Quality (HQ) or Exceptional Value (EV). HQ waters have water quality which exceeds levels necessary to support propagation and fish, shellfish, wildlife, and recreation in and on the water; supports a high quality aquatic community; or is designated a Class A Wild Trout Stream. EV waters are high quality waters that also meet additional criteria, such as being located in a state or national park, wildlife refuge or similar area, having exceptional ecological or recreational significance, or being designated a wilderness trout stream.



Fry’s Run

The quality of EV waters must be maintained and protected, whereas the quality of HQ waters may be lowered, but only subject to DEP approval and only to accommodate an important social or economic development provided all designated uses are protected.

Water quality uses in Williams Township are listed in the table below and shown on Map 4.

Tributaries to Cooks Creek	Exceptional Value
Frys Run	High Quality – Cold Water Fishes, Class A Wild Trout Stream
Browns Run	High Quality – Cold Water Fishes, Class A Wild Trout Stream
Delaware River	Warm Water Fishes
Tributary to Delaware River	Trout Stocking
Lehigh River	Warm Water Fishes
Tributaries to Lehigh River	Cold Water Fishes
Tributaries to E.B. Saucon Creek	Cold Water Fishes

Source: PA DEP Chapter 93 Stream Designated Use and Stream Existing Use, 2017

- Pennsylvania Chapter 102, *Erosion and Sediment Control* - EV and HQ waters are given further protection by Chapter 102, which contains riparian buffer requirements for such waters. When a permit is required by Chapter 102 (i.e., when disturbance is greater than one-acre in area) disturbance is prohibited within 150 feet of EV and HQ waters, and within 100-feet of waters that are not designated EV or HQ.
- National Wild and Scenic Rivers Act – Parts of the Delaware River are designated by the federal government as a National Wild and Scenic River. This includes the Lower Delaware Wild and Scenic River, which extends from Washington’s Crossing to the northern boundary of Upper Mt. Bethel; however, it does not include the stretch of river through Williams Township. The designation aims to protect the water quality, resource values, and free-flowing condition of the river by developing a river management plan and prohibiting dams and similar projects that



Delaware River

require federal permits or funding. Designation also means increased funding opportunities for river municipalities.

Williams Township Stormwater Management Ordinance – Stormwater management is addressed by the Pennsylvania Stormwater Management Act (Act 167), Pennsylvania Erosion and Sedimentation Control Act (Chapter 102), and the National Pollutant Discharge Elimination System MS4 program. LVPC prepared a stormwater management plan and model ordinance, which was adopted by Northampton and Lehigh Counties in 2006. Williams Township subsequently adopted its municipal stormwater management ordinance in 2007, which regulates stormwater management and erosion and sedimentation control and provides for stormwater best management practices (BMPs). The Township’s SALDO also contains stormwater management and erosion and sedimentation control provisions, which might conflict (this needs to be reviewed).

- Williams Township Zoning Ordinance – The zoning ordinance requires a 75-foot setback from the Delaware and Lehigh Rivers, and from streams identified on the Zoning Map, which include Browns Run, Frys Run, and tributaries to the Lehigh River, Delaware River, and East Branch Saucon Creek. The Ordinance also requires a 150-foot setback from the Delaware Canal and a 75-foot setback from the PA 611 right-of-way. The latter setback requirements appear to conflict with the former.

Recommendations – Watersheds and Surface Water

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Amend the zoning ordinance’s setback from surface waters to establish a 100-foot setback (“riparian buffer”) on streams, rivers, and wetlands, and an additional 50-foot setback (150 feet total) on all HQ and EV streams, rivers, and wetlands. This would be generally consistent with PA Chapter 102 (see above). At a minimum, the setback should be 100-feet on all streams, rivers, and wetlands and would prohibit all earth disturbance with limited exceptions for trails, certain PA permitted activities, invasive species management, removal of a hazard, and historic resources. An extensive review of the research on riparian buffers concludes that a minimum 100-foot forested riparian buffer is needed to achieve a minimum level of protection of water quality, streamside wildlife habitat, and stream ecosystems.² Consider extending the setback on the Delaware River to 100 feet from the floodplain, as recommended by the PA Natural Heritage Areas Program.³
- Following the process for National Wild and Scenic Rivers Act designation, officially register support for designation of the stretch of the Delaware River that runs through Williams Township. (See: <https://www.lowerdelawarewildandscenic.org/about/lower-delaware-wild-and-scenic-info-sheet>).

² Sweeney, Bernard and J. Denis Newbold, “Streamside Forest Buffer Width Needed to Protect Stream Water Quality, Habitat, and Organisms: A Literature Review.” Journal of the American Water Resources Association, Vol. 50, No. 3, June 2014.

³ Pg. 148

- Review all stormwater management and erosion and sedimentation control ordinances to ensure they do not conflict.
- Review surface water setback, canal setback, scenic road setback, and floodplain setback provisions to resolve any conflicts.
- Continue to investigate possible upgrades to existing and designated use classifications of streams in the Township.
- Do not use chemical sprays or other potentially toxic agents for weed or pest control, especially near waterbodies and along the Delaware Canal. Use only natural weed and pest control methods.
- Remove “golf course” as a permitted use in the Special Conservation (SC) district and where allowed in other zoning districts, permit Audubon International certified golf courses only.

Groundwater

Water that has percolated through surface soils or seeped into the ground from surface waters is contained in underground formations called aquifers. This groundwater is naturally released to the surface through springs or by seepage into creeks, streams and wetlands, or it is pumped to the surface through wells.

Aquifers are important resources because they are:

- + Natural reservoirs for groundwater used for drinking, irrigation, and other purposes
- + Natural filters for groundwater used for drinking, irrigation, and other purposes
- + Interconnected with surface water systems and help to moderate the flow of such system

Increased development can deplete aquifers when wells remove groundwater to supply the development and as more impervious surface decreases groundwater recharge. Aquifers can also be polluted by increased runoff, salts, petroleum products, and other dissolved chemicals that can pass relatively intact into an aquifer even after percolating through soils.

Groundwater resources supply the potable water for nearly all of Williams Township (with the exception of the I-78/Cedarville Road corridor). This necessitates protection and careful management of aquifer recharge areas and other groundwater resources.

Current Protection Measures – Groundwater

The current protection measures described in the “Watersheds and Surface Water” section above also apply to groundwater resources. In addition, Chapter 26 of the Township Code requires a permit for any well and contains construction standards for wells. The SALDO also contains provisions for on-lot wells, but they appear to be inconsistent with Chapter 26. The SALDO also contains a provision for a “Groundwater Quantity Impact Study” in the Preliminary Plan requirements, but it can be waived.

Recommendations – Groundwater

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Refer to the above recommendations for Watersheds and Surface Water, as they also apply to groundwater resources.
- Review Chapter 26 (Water) of the Township Code and the SALDO and rectify any discrepancies.
- Amend the zoning ordinance to prohibit disturbance of areas of hydric soils (i.e., soils where the water table is at or near the land surface).
- Amend the zoning ordinance to require a water budget impact analysis and mitigation measures for land uses and developments that meet certain criteria, which would require evidence that water use will not exceed sustainable groundwater and surface water supplies and requires mitigation measures in cases where demand will exceed supply.
- Identify wetlands and aquifer recharge areas (and/or require applicants for subdivision or land development to identify these resources) and implement appropriate protection measures. Current mapping is based on National Wetlands Inventory data, which does not capture all existing wetlands and aquifer recharge areas; therefore, local field identification is required.

Wetlands

Wetlands, shown on Map 3, are defined by the Pennsylvania DEP in *Title 25, Chapter 105* as: “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.”

Title 25, Chapter 105 of the PA Code further defines “exceptional value wetlands.” As currently pertains to Williams Township, exceptional value wetlands are those wetlands that are:



Wetland

- + Located in or along the floodplain of Browns Run and the lower reach of Frys Run (i.e., the portion classified as a Wild Trout Stream) and the floodplain of their tributary streams
- + Serve as habitat for threatened or endangered species (see Core Habitat, below)
- + Hydrologically connected to or located with ½ mile of wetlands that serve as habitat for threatened or endangered species
- + Located along an existing public or private surface water or groundwater drinking water supply and that maintain the quality or quantity of the drinking water supply and its tributaries
- + Located in the corridor of a watercourse or waterbody designated by the federal or state government as wild or scenic (this would apply to wetlands in the Williams Township segment of Delaware River corridor if it were to receive this designation as the segments north and south of the Township have).

Wetlands are very important because they:

- + Store surface and groundwater

- + Provide groundwater recharge
- + Provide needed flood control
- + Provide critical habitat

Disturbance of wetlands and adjacent areas can impair water quality, especially where a wetland provides direct connection between surface and groundwater. Disturbance can also damage natural drainage and critical habitat; exacerbate flooding; and lead to wet basements, foundation instability, and failed on-lot septic systems.

Current Protection Measures – Wetlands

- Clean Water Act and Pennsylvania’s Dam Safety and Encroachment Act – Wetland encroachments are regulated through a permitting process authorized by the federal Clean Water Act and Pennsylvania’s Dam Safety and Encroachment Act. A permit applicant must demonstrate that he/she has taken steps to avoid wetland impacts where practicable, minimized potential impacts to wetlands, and mitigated any remaining unavoidable impacts through activities to restore or create wetlands.
- Wetlands receive a minimal protection by Williams Township’s SALDO and zoning ordinance. The SALDO requires a wetland delineation only if wetland alteration is proposed. The zoning ordinance relies on federal and state regulations with no added protection.

Recommendations – Wetlands

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Refer to the above recommendations for Watersheds and Surface Water, and for Groundwater, as they also apply to wetlands, especially the surface water setback recommendation.
- Amend the SALDO to require a wetland delineation in all cases where wetlands might exist on the site. This would be consistent with the zoning ordinance’s requirement for a wetland delineation (Section 27-1504.1).

Soils

Soil properties differ according to underlying geology, climate, and topography, and in turn, influence local vegetative cover, hydrology, and land use. Hydric soils, which are indicative of the presence of a wetland, and soils with drainage limitations are generally unsuitable for development because of their wet conditions. Their importance to water quality and supply, flood control, and habitat health make these soils best suited for preservation. They are primarily located in low-lying areas of the Township near streams and waterbodies (Map 3). Areas with “partially hydric” soils might also limit development potential, but this must be determined by site testing.

“Prime farmland” is land best suited for producing crops. It has the soil quality, growing season and moisture supply needed to produce sustained high yields of crops. Additional land is recognized by Pennsylvania as “additional farmland of statewide importance.” Both prime farmland soil and farmland soil of statewide importance are located in abundance throughout the Township (Map 5). A large

contiguous area of prime farmland soil stretches across the southern portion of the Township and is host to the bulk of the Township's farming industry.

Current Protection Measures – Soils

Williams Township's zoning ordinance regulates the stripping of topsoil, but there are no explicit regulations for hydric soils and farmland soils. Farmland soils may receive a minimal degree of protection in the A and LDR zoning districts when development is undertaken in accordance with Conservation Development standards and farmland soils are included in the required open space.

Recommendations – Soils

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

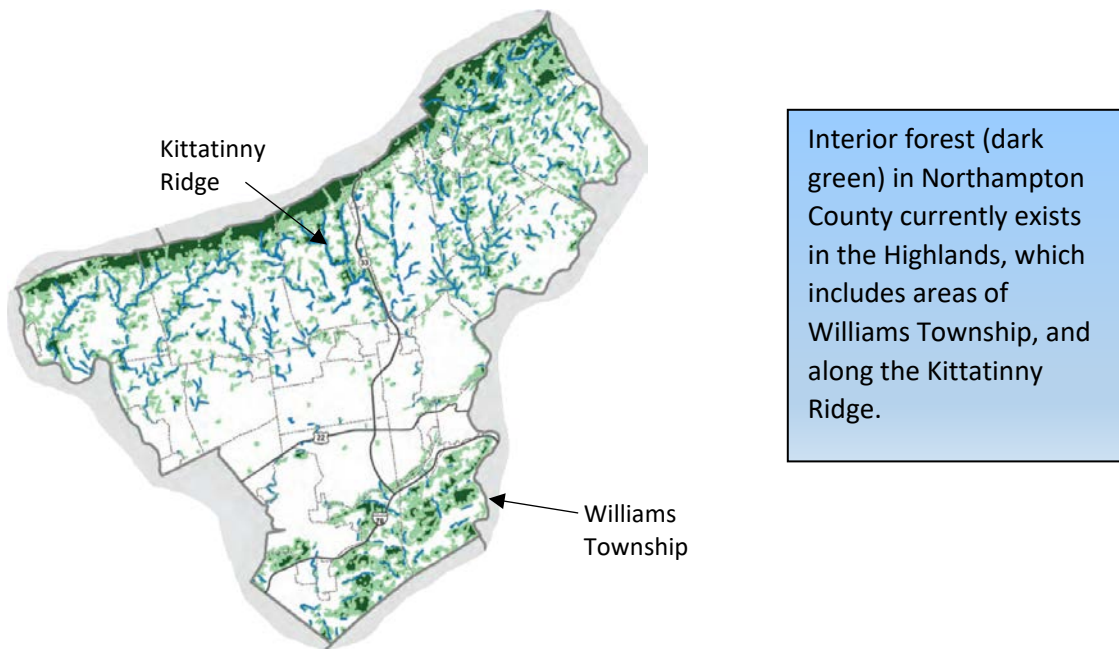
- Prohibit disturbance of hydric soils (this could be done partly through the Township's stream setback standards).
- Limit development on soils with drainage limitations or a high water table.
- Provide an incentive for use of the Township's Conservation Development standards, which would provide some protection of farmland soils where they are included in the required open space. (Note: At this time, the Township favors Conservation Development over effective agricultural zoning methods).
- Continue working with landowners to secure agricultural easements and conservation easements on properties that contain farmland soils.

Woodlands and Forests

Woodlands and forests, shown on Map 3, provide numerous benefits for air and water quality, stormwater management, groundwater recharge, climate control, and biodiversity. Woodlands and forests filter the air, stabilize slopes and soils, prevent erosion and sedimentation, provide shade that regulates air and water temperature, store carbon, and provide wildlife habitat. They also contribute to the Township's scenic quality and provide opportunities for recreation.

Maintaining large, contiguous tracts of forest is critical to preserving healthy interior forest habitats. Interior forest is forest that is at least 300 feet from the edge of any opening such as a field, road, railroad or utility right-of-way. The area between the forest edge and 100 meters into the forest is considered highly influenced by edge effects, such as increased levels of light, noise, temperature, wind and dryness which create much different habitat conditions than those found in interior forest conditions. Many plant and animal species, including many songbirds, require interior forest habitat conditions for survival.

Fragmentation of woodlands and forests occurs when land is cleared, leaving small, isolated patches of trees. In addition to the adverse impacts to air, water, and climate, fragmentation threatens plant and animal species, especially those whose survival depends on an intact interior forest. Fragmentation also cuts-off movement corridors, forcing wildlife into human-inhabited areas. Finally, it diminishes the opportunity for establishing greenway corridors for recreational use and "green infrastructure."



Source: *Livable Landscapes-An Open Space Plan for Northampton County*, 2015, pg. 52

Current Protection Measures – Woodlands and Forests

Williams Township’s zoning ordinance and SALDO provide limited protection for woodlands and forests.

- Although the zoning ordinance contains provisions for “preservation of trees and forests,” it: allows for nine conditions under which trees can be removed; requires “reasonable efforts” to protect trees during construction rather than specifying required methods for protecting trees during construction; and exempts landowners from tree and forest protection requirements once a Certificate of Occupancy is issued. These caveats could effectively negate any woodland protections.
- The zoning ordinance also contains regulations for forestry activities, which might conflict with the other tree and forest protection provisions.
- The Williams Township SALDO contains provisions for landscaping and trees, which state that large trees and mature groves of trees shall be reasonably protected. However, “large trees” and “mature groves of trees” are not defined, and “reasonably protected” leaves considerable room for interpretation. The SALDO also contains provisions for planting of street trees, but exempts single-family detached residential lots with a lot area greater than two acres. Finally, the SALDO should, but does not: require identification of woodlands, large trees, specimen trees, or hedgerows on site plans; require replacement of removed trees; or define parameters for deeming a tree preserved.

Recommendations – Woodlands and Forests

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion.

Amend the SALDO to:

- Require identification of woodlands and forests, mature trees, specimen trees, and hedgerows on site plans along with identification of trees proposed for removal and locations of replacement trees
- Define “large trees,” “mature groves of trees,” “specimen trees,” and “prime” or “high quality woodland” (prime/high quality woodland would include healthy, mature, reproducing woodlands that support important ecological functions and habitats)
- Define parameters for what is considered a “preserved tree”
- Provide tree replacement standards, applicable when mature trees are removed, whereby the number, type, and sizes of replacement trees are scaled according to the number, type, and sizes of removed trees and the quality of woodland habitat being disrupted.
- Remove the street tree exemption for single-family detached residential lots with a lot area greater than two acres
- Require a meeting with the applicant and/or site contractor and a registered landscape architect (acting on behalf of the Township) prior to any clearing or site disturbance to examine ways to minimize tree loss, and require inspection by landscape

Amend the zoning ordinance to:

- Remove the nine conditions under which trees can be removed
- Remove the exemption for property owners upon issuance of a certificate of occupancy, making tree protection applicable to all properties, but provide an exception for agriculture and to allow for customary lot improvements (e.g. exempt tree removal up to X square feet on a lot that is not related to a subdivision or land development)
- Consider limiting the percentage of woodlands and forests that can be cleared
- Define standards for tree protection, especially during construction
- Require protection of specimen trees except where the tree presents a hazard or is diseased as determined by a certified arborist
- Require that areas of preserved woodland and forest be contiguous and connect to woodlands/forests on adjacent properties in order to preserve large, intact woodlands/forests and woodland/forest corridors

- To ensure preservation of high quality woodlands/forests and habitats, require a detailed woodland/forest habitat assessment wherever clearing is proposed, and wherever possible, require preservation of the higher quality woodlands/forests over the lower quality ones.
- Update forestry standards and ensure they do not conflict with the tree and forest protection standards

In addition, the Township should consider provisions to:

- Give high priority to interior forests when evaluating land for open space preservation
- Prohibit planting of invasive species
- Require a minimum percentage of native species when tree and vegetative plantings are required
- Require a variety of species when tree and vegetative plantings are required in order to minimize the risk of widespread disease
- Require protection of significant vegetation and hedgerows
- Make maintenance and replacement of trees required as part of development plan approval

Core Habitat and Supporting Landscapes

The Pennsylvania Natural Heritage Program (PNHP) maintains an inventory of habitat areas to guide conservation efforts and land use planning. These habitat areas are identified based on the existence of: habitat for plants and animals of special concern (i.e., rare, threatened, and endangered plant and animal species); the existence of uncommon or especially important natural communities; and the size and landscape context of a site containing good quality natural features.



Source: PA Natural Heritage Program

“Core habitat” areas represent the essential habitat of species of concern or natural communities where even slight disturbance would cause substantial adverse impact to the habitat and the species.⁴ Each core habitat is surrounded by a “supporting landscape,” the area directly connected to the core habitat that maintains vital ecological processes and/or secondary habitat.

Core habitat areas are shown on Map 3. Refer to the *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013* for detailed maps depicting each core habitat and its supporting landscape.

⁴ *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013*

Core habitat areas and supporting landscapes in Williams Township are described below (the following is sourced from *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013*):

- **Coffeetown Woods** is located in and adjacent to the Mariton Wildlife Sanctuary. Much of the forest has been standing for over 100 years, and individual trees that are even older are likely in existence here. Though fragmented by roads, fallow agricultural fields and a utility ROW, Coffeetown Woods still contains roughly 90 acres of interior forest. Two species of concern – a butterfly species and a plant species – are present.
 - + Threats to the site include: encroachment of invasive species that have been introduced and often invade former agricultural fields; over browsing by white-tailed deer; and fragmentation due to the utility ROW (which fragmented the interior forest into two pieces when it was installed).
 - + Conservation actions include: maintain early successional habitats, such as meadows, where they currently exist, which support the two species of concern; allow forested habitats to achieve and maintain old growth conditions; avoid further fragmentation of the forest; avoid logging; control invasive species; and reduce deer density.
- **Morgan Hill**, a rocky, forested hill, is located adjacent to the Morgan Hill Golf Club. This site is the habitat for an unnamed sensitive species of concern.
 - + Threats to the site include: rural and suburban development and its associated infrastructure, impervious surfaces, and septic systems, which cause changes to the natural hydrology and increase potential pollution. Development in this area has expanded rapidly in recent years, replacing natural habitat and reducing the size of the forest. Encroachment of invasive species, over browsing by deer, and further fragmentation also threaten the species.
 - + Conservation actions include: creating buffers around fragmented habitat; control invasive species; avoid further fragmentation of the forest; and reduce deer density.
- **Lehigh Slopes** is in the Township’s northwestern corner between the Lehigh River and I-78 near Island Park Road. The site supports two species of concern – one plant species and one unnamed species.
 - + Threats to site include: the quarry in Williams Township; the highway interchange in Lower Saucon Township; the railroad at the base of the site; I-78; invasive species, which have taken hold in areas that have been disturbed by development; and over browsing by deer.

- + Conservation actions include: prevent incursions into the forested area; prevent further fragmentation of the forest; allow the regeneration of native trees, shrubs and herbaceous layers; allow the forest cover of the river slopes to achieve and maintain older-growth characteristics; create “no spray” zones along the most sensitive areas of the railroad rights-of-way to avoid unintentional destruction of the species of concern or their habitats; suppress the establishment and spread of invasive species (the railroad ROW and forest/highway transition zones are likely the primary location of non-native trees and shrubs within this area); reduce deer density.
- **Granite Hill Vernal Pools** is located in the southwest corner of the Township near Wassergrass Road. The East Branch Saucon Creek flows through the woods at this site and provides part of the headwaters recharge for the creek. The site supports a natural community of vernal pools. “Vernal pools are small isolated wetlands that typically hold water for only a part of the year, usually during the late fall through early spring. Most vernal pools dry completely during the summer. Because vernal pools typically dry up during a part of the year, they do not support fish, but instead are considered important amphibian breeding habitat. While the pools are essential for breeding and early development of amphibians, the adjacent forested habitat is also critical to support adult amphibians.”⁵
 - + Threats to the site include: lack of a forested buffer due to agricultural fields; encroachment of invasive species from agricultural fields that are left to revert to forest; several residences, a man-made pond, and a conifer plantation adjacent to the vernal pools.
 - + Conservation actions include: maintain the natural hydrology of the site, which supports the seasonal water levels of the pools; manage runoff from adjacent sites, which could contaminate the vernal pool habitat; avoid removal or fragmentation of the surrounding forest canopy; control invasive species; avoid logging.
- **Raub's Island and Whippoorwill Island** are islands in the Delaware River. Raub's Island contains habitat that supports two species of concern. Whippoorwill Island contains habitat that supports a natural community and a species of concern.
 - + Threats to the sites include: development of nearby land, which generates runoff, pollution, and sediments; encroachment of invasive species; sand and gravel quarrying of the riverbed; and flooding.
 - + Conservation actions include: discourage shoreline development; control invasive species; preserve the river's natural water levels.
- **Delaware River** - The entire stretch of the Delaware River along the eastern boundary of Northampton County is a Natural Heritage Area. It contains six species of concern, including aquatic and plant species, and one unnamed sensitive species of concern.

⁵ *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013*, pg. 223

- + Threats to the site include: development of nearby land; unvegetated riparian corridors; impaired water quality of the river due to mercury and PCB contamination; the prevalence of impervious surfaces in surrounding areas, which channel pollutants into waterways that drain into the river.
- + Conservation actions include: discourage shoreline development; setback any development 100 feet from the river's floodplain; preserve the river's natural water levels and avoid construction of dams on the river; preserve and restore floodplain habitats along the creek's edge to slow and filter runoff before it enters the aquatic system; provide vegetated buffers along tributaries and along the river shoreline; incorporate detention basins and rain gardens to allow stormwater to be filtered before entering waterways; upgrade any outdated combined sewer and storm systems to avoid effluent discharge during storm events; use porous surfaces and limit impervious surfaces; control invasive species.
- **The Delaware River-Frys Run Watershed** is classified by the PNHP as a supporting landscape. It covers much of Williams Township (Map 4). This area contains numerous wetlands that support a sensitive species of concern.
 - + Threats to the site include: draining of wetlands for agricultural use; development and associated impervious surfaces, runoff, septic systems, and groundwater withdrawal; alteration of the specific wetland vegetation required by this species; encroachment of invasive species; and over browsing by deer.
 - + Conservation actions include: restoration of wetlands and floodplains and their natural functions; maintain the floodplain of creeks within the watershed and their associated wetlands as a wetland complex composed of multiple types of wetlands with both open herbaceous dominated wetlands and closed canopy floodplain forests; establish and maintain corridors of native vegetation between wetlands; establish and maintain a buffer of native vegetation around wetlands (but avoid allowing woody species to encroach on herbaceous wetlands); restrict building activities and the tilling of fields and chemical or nutrient application within floodplains; pursue habitat restoration under professional guidance and according to PNHP recommendations.⁶

Current Protection Measures – Core Habitat

There are no Township ordinance provisions or other types of protections that explicitly target core habitat areas. These areas are protected in so far as the zoning ordinance and SALDO protect other related natural resources (see above) and where conservation easements are secured on properties that might contain a core habitat area or supporting landscape. A portion of the Coffeetown Woods is protected by virtue of being within the Mariton Wildlife Sanctuary, while the remainder lies outside of the Sanctuary.

⁶ For PNHP habitat restoration recommendations in the Delaware River-Frys Run Watershed see: *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013*, pg. 160

Recommendations – Core Habitat

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Pursue the conservation actions listed for each of the habitat areas as described above. For more details on the habitats and conservation actions see *Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013* at: http://www.naturalheritage.state.pa.us/CNAI_PDFs/Lehigh%20and%20Northampton%20CNHI_update_2013.pdf
- Refer to all of the above recommendations for the natural resources included in this chapter, as they also apply to core habitat areas and supporting landscapes
- Amend the SALDO to require applicants to delineate core habitats and supporting landscapes on plans (see PNHP mapping)
- Amend the zoning ordinance to prohibit disturbance of core habitat areas and strictly limit disturbance of their associated supporting landscapes (see PNHP mapping)
- Investigate the possibility of requiring the inclusion of core habitats and supporting landscapes in protected open space when a land development occurs
- Prioritize core habitats and supporting landscapes for protection via conservation easements
- In the Delaware River-Frys Run Watershed: identify existing wetlands, locations of historic wetlands, and wetlands that are in the process of recovering; pursue wetland restoration under the guidance of a professional; connect wetlands via natural greenways.

Greenways and Blueways

There is certainly value in protecting natural and historic resources, open space, and parks/recreation areas, but that value is greatly enhanced when these features are connected to form a network of greenways and blueways.

Livable Landscapes – The Northampton County Open Space Plan defines greenways and blueways as follows:

- + Greenway - is a corridor of open space ranging from a narrow strip of land to wider corridors that incorporate diverse natural, cultural, and scenic features
- + Blueway - is a greenway that includes a watercourse

Greenways and blueways can be further classified according to their main function:

- + Cultural/Recreational – support human activity
- + Conservation – support ecological and conservation purposes
- + Multi-Use – support both cultural/recreational and conservation purposes

- + Scenic – are visual connections across the landscape that provide scenery for residents and visitors⁷

The *Lehigh Valley Greenways Plan* and *Livable Landscapes – The Northampton County Open Space Plan* identify multi-use, conservation, and scenic greenways and blueways in Williams Township

Current Protection Measures – Greenways and Blueways

Greenways and blueways exist in Williams Township to the extent that much land is currently undeveloped. That said, existing corridors, especially in low lying areas, could be disrupted and connections broken as development occurs.

Recommendations – Greenways and Blueways

This Comprehensive Plan supports the greenways and blueways identified in The *Lehigh Valley Greenways Plan* and *Livable Landscapes – The Northampton County Open Space Plan* and expands on them by including the natural resources shown on Map 3. Greenways and blueways can be established via the recommendations below.

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Amend natural resource protection standards in order to preserve existing natural connections formed by watercourses, floodplains, wetlands, woodlands, etc. (see Natural Resource Protection section of this Comprehensive Plan)
- Require inclusion of natural resources in Conservation Development’s protected open space areas and promote Conservation Development by providing incentive for its use (see Land Use section of this Comprehensive Plan)
- Continue to secure conservation easements taking into consideration land that contains recommended greenways and blueways
- Facilitate awareness among owners of properties with existing conservation and agricultural easements of the role those properties play in the local and regional greenways/blueways system and the need for their stewardship of resources on their properties.

⁷ Scenic greenways and blues are defined by LVPC, whereas the others are defined by the Pennsylvania Greenways Program.

HISTORIC RESOURCE PROTECTION PLAN

Historic resources are generally defined as buildings, sites, districts, objects, or structures that have historical, archaeological, cultural, engineering, or architectural value. Various types of historic resources are found throughout Williams Township, providing evidence of the Township's heritage and contributing to its identity, scenic beauty, and rural character.

As evidenced by public input and the results of the community survey, Williams Township's historic resources are valued features of the community, and their continued preservation is an important goal. Indeed, the Township's rural character and scenic beauty are largely defined by its historic resources.

Objective

Protect historic resources to ensure their continued contribution to the Township's rural character and scenic beauty, and to capitalize on their economic, cultural, and educational benefits.



Coffeetown Grist Mill (1762), listed on National Register of Historic Places

Benefits of Historic Resource Protection

Protection of historic resources can provide many benefits to the Township:

- **Community Identity and Rural Character** – The Township's historic resources are physical remnants of the past that bring history alive and serve as reminders of the events and circumstance that gave rise to the Township, the region, and the nation. They are important to the Township's identity, scenic beauty, and rural character.
- **Economics** – Several studies show that historic resource protection has significant economic benefit.¹

¹ "Economics and Historic Preservation: A Guide and Review of the Literature," Brookings Institution Metropolitan Policy Program (September 2005).

- The *D & L Trail 2012 User Survey and Economic Impact Analysis*, estimated 283,000 annual trail users resulting in an economic impact of over \$19 million, of which over \$16 million went directly into the local economy².
- A study of Pennsylvania Heritage Areas found that in 2014, tourists purchased more than \$2 billion worth of goods and services, 70 percent of which was related to heritage attractions. Heritage tourism contributed 25,708 jobs to the state economy and \$798 million in labor income.³ (Note: Williams Township is in the Delaware and Lehigh National Heritage Corridor, which is also a Pennsylvania Heritage Area).
- A 2011 study concluded that through heritage tourism, historic resources bring tourist dollars into the local economy. It estimated that heritage tourism results in \$1.3 billion in annual expenditures in Pennsylvania.⁴
- Historic preservation projects can leverage federal tax credits to stimulate private investment, construction jobs, and spending in the local economy, which generates local and state tax revenue. It is estimated that in Pennsylvania between 1978 and 2010, historic preservation projects generated an annual average of \$530 million in total expenditures, 4,600 jobs, and \$12 million in state tax revenue.⁵
- Historic preservation increases property values substantially. Studies show that homes with a historic designation and homes in and near a historic district trade at a premium to other homes in the area. Homes in West Chester Borough's historic district command an average \$81,000 premium over homes in Chester County and an average \$36,000 premium over other homes in the Borough.⁶ In Powelton Village (Philadelphia), house prices increased 63% in the year following historic designation and continued to increase 3% more per year than the citywide average.⁷
- Allowing historic resources to be adapted to an income generating use can provide a long-term economic benefit to the property owner and the local economy.
- **Redevelopment and Revitalization** – Rehabilitation and adaptive reuse of historic resources can be an integral part of redevelopment and revitalization initiatives and can promote stabilization of both residential and commercial areas of the Township.
- **Recreation and Open Space** – Historic resources can serve as points of interest or destinations within a broader open space and recreation system. In many cases, the landscape and open space surrounding a historic resource provide context that is critical to the integrity of the resource. In this way, they enjoy a symbiotic relationship, with historic resources increasing the value and enjoyment of the recreation and open space system and vice-versa. Connecting historic resources

² "D & L Trail 2012 User Survey and Economic Impact Analysis," Tomes, Patricia and Carl Knoch. December 2012.

³ "The Economic Impact of Pennsylvania Heritage Areas," McGrath, John M., PhD, David Primm and William Lafe, January 2016.

⁴ "Economic Benefits of Historic Preservation Activities in Pennsylvania," Econsult Corporation (December 2011).

⁵ "Economic Benefits of Historic Preservation Activities in Pennsylvania," Econsult Corporation (December 2011).

⁶ "Economic Benefits of Historic Preservation Activities in Pennsylvania," Econsult Corporation (December 2011).

⁷ Ibid.

via trails and preserving open spaces that lend context to historic resources provides double the return for the effort.

- **Education** – Historic resources are valuable educational resources, providing a tangible learning experience for people of all ages that connects them to their community.

Inventory of Williams Township's Historic Resources

National Register of Historic Places

The National Register of Historic Places was established by the National Historic Preservation Act of 1966 and is maintained by the National Park Service. The program is designed to identify significant historic and archeological resources worthy of preservation and of consideration in planning and development decisions. In Pennsylvania, the program is managed by the Bureau for Historic Preservation, a department within the Pennsylvania Historical & Museum Commission (PHMC).

Resources on the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. In order to be eligible for the National Register, a resource must meet one of four criteria:

- 1) the resource is associated with events or activities that have made a significant contribution to the broad patterns of our history;
- 2) the resource is associated with the lives of persons significant in our past;
- 3) the resource has distinctive characteristics of a building type, period, or method of construction, that represent the work of a master, possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and
- 4) the resource has yielded, or may be likely to yield, information important in prehistory or history⁸.

A resource that meets any one of the four eligibility criteria is given a Determination of Eligibility (DOE) by the Bureau for Historic Preservation. That resource, however, might never obtain a listing on the National Register.

Listing on the National Register or receiving a DOE simply provides recognition of the historic resource. Contrary to popular belief, it does not restrict a landowner's right to make changes to the resource or even demolish it. A landowner can do whatever he/she wants to do with the resource as long as there are no federal monies involved (i.e., projects that received federal funds, sponsorship, or assistance must be reviewed for their impact on National Register listed or eligible resources). Landowners may in fact realize financial benefits from listing on the National Register, including potential eligibility for tax incentives for rehabilitation of income producing historic resources and tax deductions for donation of easements for historic preservation purposes.

⁸ Pennsylvania Historical & Museum Commission

Resources in Williams Township Listed on the National Register of Historic Places

- Stout, Isaac, House (c. 1771; additions/alterations c.1793)
- Coffeetown Grist Mill (1762)
- Arndt, Jacob, House and Barn (c.1770; additions/alterations c. 1800)
- Chain Bridge (1857)
- Unnamed bridge over Fry's Run (1857)
- Delaware Canal (and contributing resources, including Odettes/Vansants River House, Delaware Road Bridge, Sommer's Camelback Bridge, and Sphars Camelback Bridge)



Isaac Stout House, c. 1771 (Source below)



Jacob Arndt House, c. 1770 (Source below)

Resources in Williams Township with Determination of Eligibility for the National Register of Historic Places

- Opp, M., Bridge (1824)
- Hoover Farm (c. 1850)
- Unnamed bridge on Canal Road (1900)
- Unangst/Wirth Farm (no date provided)
- Moritz Grist Mill (1740)
- Rodenback, G. Miller, Farmstead (1850)



Jacob Arndt Barn, c. 1770 (Source below)



M. Opp Bridge, 1824

National Historic Landmarks Program

National Historic Landmarks are “nationally significant places designated by the Secretary of the Interior because they possess exceptional value of quality in

Image Sources:

By Shuvaev - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=28030810>

By Shuvaev - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=28029305>

illustrating or interpreting the heritage of the United States. Today, just over 2,500 historic places bear this national distinction.”⁹ National Historic Landmarks are automatically listed on the National Register of Historic Places.

National Historic Landmarks in Williams Township

- Delaware Canal

Delaware & Lehigh National Heritage Corridor and Pennsylvania Heritage Area

Williams Township is in the Delaware & Lehigh National Heritage Corridor. The Corridor was established by the U.S.

Congress in 1988 to recognize the historical and natural resources of the Delaware, Lehigh, and Wyoming Valleys where “anthracite coal was discovered, canals were built, and iron was first poured.”¹⁰

The Corridor is also one of twelve Pennsylvania Heritage Areas. The Pennsylvania Heritage Areas Program is an economic development program that builds on the state’s natural, cultural, and industrial history. It seeks to enhance a region’s sense of place and strengthen regional economies by creating vibrant communities that attract private investment and tourism.

Funding is awarded to projects within the Corridor that will stimulate regional economic development, preservation, and heritage tourism.

Locally Significant Historic Resources

In addition to historic resources listed or eligible for the National Register are others in that are important to the Township or the region.

In 1970, the LVPC conducted an inventory of the most important historic resources in the region. This inventory was updated in 1976 by the Williams Township Bicentennial Committee in a report entitled *Bicentennial History of Williams Township*. The inventory includes 60 historic resources. A list of the 60 resources is also included in the Township’s 1989 Comprehensive Plan, and is reproduced here in Appendix C.

Currently, the Pennsylvania Historical and Museum Commission cites 51 historic resources in the Township (including resources on the National Register) and 34 archaeological sites, but this might not accurately capture the current local inventory.

The Township should update its inventory, noting resources that no longer exist and resources to be added to the list. The inventory should also be mapped to show the locations of historic resources. The Township should consider contracting with a professional architectural historian or historic preservation consultant who will be conversant in state and national standards for conducting historic resource



Delaware Canal

⁹ National Park Service, National Historic Landmarks Program, <https://www.nps.gov/nhl/>

¹⁰ National Park Service, Delaware and Lehigh National Heritage Corridor, <https://www.nps.gov/nr/travel/delaware/heritage.htm>

inventories and surveys. This will ensure that the updated inventory or survey will properly support any future historic resource preservation programs, initiatives, or ordinances. The professional would work with the local historical society and utilize its resources and knowledge base to the extent possible.

Historic Resource Protection

In Pennsylvania, protection of historic resources is enabled by two pieces of legislation: the Historic District Act of 1961 (Pennsylvania Act 167) and the MPC.

Historic District Act of 1961

Regulations under the Historic District Act apply only to *historic districts* that are on the National Register or certified as historic by the PHMC. Under the Historic District Act, a municipality has the authority to create local historic districts and protect the historic and architectural character, including aesthetics, within those historic districts. However, the historic district must first be certified by PHMC; that is, the district and its regulations must be reviewed by the PHMC and must satisfy recommendations of the review before being enacted. The Act also requires the appointment of a Historical Architectural Review Board (HARB), which makes recommendations to the governing body pertaining to resources within the historic district.

Municipalities Planning Code (MPC)

Under the MPC, a municipality may establish measures to protect historic resources via the zoning ordinance, but these measures are generally viewed as less restrictive than regulations enacted under Act 167 because they typically do not regulate aesthetics. The MPC also permits the establishment of a municipal historical commission. The historical commission has no decision-making authority; it acts in a support capacity only. It conducts research and provides data on historic resources. It also reviews applications pertaining to historic resources and makes recommendations to the zoning officer and governing body.

Preservation Easements

Preservation easements are conservation easements that protect properties that have historic, architectural, or archaeological significance. The property owner voluntarily conveys the easement to a qualified preservation organization, while he/she retains numerous rights to the property.

The terms of individual preservation easements are varied, but generally, they can be used to protect exterior (i.e., façade) and interior features of a historic building, and lands that comprise the setting of a historic building. Activities such as demolition, additions to, or inappropriate alteration of historic buildings, or the subdivision of surrounding land can be controlled. Preservation easements also typically protect against the deterioration of the resource by requiring its maintenance.

Property owners who enter into a preservation easement may be eligible for a tax deduction.

Williams Township Current Historic Resource Protection Measures

Historic resources in Williams Township receive virtually no protection, which leaves all of them vulnerable to destruction and loss of integrity. There are no provisions in the Zoning Ordinance that protect historic resources, and although section 22-1018.5 of the SALDO contains some historic resource protection language, it is minimal and rather ineffective. The SALDO's plan submission checklists require identification of "buildings estimated to be 80 years or older that could be impacted by the project, with

name and description,” but this likely excludes many historic resources that are not considered “buildings.”

Recommendations

Williams Township’s historic homes, barns, canals, and other structures provide a connection to the area’s heritage and add to the Township’s scenic beauty. Indeed, they are an intrinsic part of the Township’s rural character, which is so highly valued by residents. Their protection is necessary to preserving the Township’s rural character; to realizing their economic, cultural, and educational benefits; and to protecting residents’ quality of life and well-being.

Recommendations for historic resource protection emphasize incentives for their protection and ways to increase the potential for their use, rather than restrictions.

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Conduct a historic resources inventory or survey to produce an updated list and map of historic resources and supporting data. The Township should consider contracting with a professional architectural historian or historic preservation consultant who will be conversant in state and national standards for conducting historic resource inventories and surveys. This will ensure that the updated inventory or survey will properly support any future historic resource preservation programs, initiatives, or ordinances. The professional would work with the local historical society and utilize its resources and knowledge base to the extent possible.
- Create a township historical commission. The historical commission would not have the authority to, for example, tell people what color they can paint the shutters on their houses. It would act in a support capacity only, conducting research and providing data on historic resources, reviewing applications pertaining to historic resources, and making recommendations to the zoning officer and board of supervisors.
- Amend the Zoning Ordinance to include basic historic resource protection measures in the form of an overlay district that applies to properties containing a historic resource as listed in the updated inventory/survey (see first bullet). Provisions would be limited to:
 - Allowing a historic resource to be used for a purpose other than its original use (known as “adaptive reuse”)
 - Allowing modifications of modern area and bulk standards that are not compatible with the historic resource in order to increase the potential for its use
 - Requiring the submission of an application for demolition, removal, or relocation of historic resources, including intentional demolition and demolition by neglect, and providing for a review of demolition applications by the historical commission in order to assess possible alternatives to demolition, removal or relocation
 - Providing guidelines for rehabilitation of historic resources
- Amend the zoning ordinance to provide incentives to protect historic resources, such as:

- Giving a development density bonus for providing open space adjoining a historic resource
- Giving a development density bonus for renovation or adaptive reuse of a historic structure into a dwelling unit or other use and requiring preservation of the structure's historic integrity
- Amend the SALDO to:
 - Provide a credit toward open space requirements if historic resources are preserved in accordance with certain specified conditions
 - Require plan submissions to identify all types of historic resources (i.e., consistent with those listed on the Township's inventory/survey as described above)
 - Require a historic resource impact study (under certain specified conditions) and mitigation of impacts on historic resources
- Conduct outreach to owners of historic resources regarding the sale and/or donation of preservation easements (see "Preservation Easements" above).
- Incorporate historic resources into recreation and trail planning in order to bring people closer to those resources. Utilize interpretive signs to raise awareness of the resources and their history. This is an immediate possibility along the Delaware Canal Towpath Trail.
- Investigate the possibility of heritage tourism as a means to link the Township's historic resources to the local economy. A pedestrian and bicycle path connection from the Delaware Canal to Raubsville and/or to businesses along PA 611 could enhance the local economy.
- Continue to identify and document historic resources and where warranted, submit nominations for listing on the National Register. Identify and evaluate historic landscapes that warrant protection through inclusion in open space.
- Conduct public outreach and education on the Township's historic resources. This could include featuring a historic site and/or information about historic preservation in each edition of the township newsletter and/or on the township website, creating an actual or virtual tour of historic buildings, holding events related to the Township's history and historic resources, and host educational programs for area students.

CIRCULATION/TRANSPORTATION PLAN

For the purposes of this comprehensive plan, the term “circulation” is synonymous with “transportation” and refers to traffic management and public transportation. Pedestrian and bicycle systems are addressed in the Community Facilities and Utilities chapter.

Nearly all roads in Williams Township can be described as scenic, rural roads. These hilly, winding, narrow, two-lane roads with virtually no shoulders are an important facet of the Township’s rural character. But as the Township develops, more vehicles will place greater demands on these roads, which were not designed for a high level of use, and resulting road improvements could alter the rural character of the roads.

In planning for future development, the Township must coordinate residential density and non-residential uses with transportation infrastructure, considering the traffic such development would generate, the capability of the roads to handle the added traffic, and the impact of improvements associated with development on a road’s rural character. To that end, the northern portion of the Township along the I-78 corridor is planned for moderate to high intensity land use. The remainder of the Township, traversed by low capacity rural roads, is planned for low density development, while the “Town Center” is intended as a walkable neighborhood.

Objectives

- Maintain the rural integrity of the Township’s roadways while safely and efficiently accommodating an appropriate level of vehicular traffic given roadway function and capacity.
- Support Easton’s initiative to establish a rail link between Philadelphia and New York City.

Roads

On the community survey when rated for quality, road safety and road condition/maintenance scored second lowest among the various facilities and services queried, next to



pedestrian and bicycle access and safety. Road safety and road condition/maintenance each scored “fair.” The relatively low score appears to be related to excessive travel speeds on the Township’s main arteries, poor sight distance at certain intersections, and access to abutting properties.

Roadway Functional Classification

Roads are designed to serve various types of trips and travel speeds and accommodate various traffic volumes. The roadway functional classification system is a method of categorizing roads according to the purpose they are intended to serve. It recognizes the hierarchy and interconnectivity of the road network and strives to achieve continuity and efficiency of travel.

Related to functional classification is the notion of access and mobility. **Access** refers to the ability to enter or exit a road from abutting land. **Mobility** refers to the road’s ability to move traffic. Roads designed to have a high level of access, such as local roads, have limited mobility. Roads designed to have a high level of mobility, such as arterials, have limited access.

Map 6 shows roadway functional classifications for Williams Township designated by PennDOT and the Township’s SALDO. The following descriptions are taken from the AASHTO’s *A Policy on Geometric Design of Highways and Streets*.¹

- **Principal Arterial, Interstate: I-78**
Principal Arterial, Interstate refers to limited access interstate freeways intended to carry large volumes of traffic at high speeds across a great distance. The I-78/PA 611 interchange is located in Williams Township at the north end of Morgan Hill Road.
- **Principal Arterial, Other**
Other principal arterial roads serve high-speed, high-volume traffic travelling between major points in both urban and rural areas. They are further classified as urban or rural as follows:
 - **Principal Arterial, Other, Urban: PA 611 north of Royal Manor Road & Morgan Hill Road north of Cedarville Road**
Urban principal arterial roads serve major activity centers of urban areas and carry large volumes of traffic with a high level of mobility through the activity center and to outlying areas. “The principal objective for an urban arterial should be mobility with limited or restricted service to local development. If restrictions are not practical, special designs that incorporate access management are desirable. Urban arterials can provide access to abutting land, but access should be incidental to the primary function of mobility.”²
 - **Principal Arterial, Other, Rural: PA 611 south of Royal Manor Road**
Rural principal arterial roads serve statewide or interstate travel between urban areas. Their design should consider the terrain, general character of the alignment, and composition of traffic. Accordingly, the principal function of this segment of PA 611 should be mobility and access should be restricted or incidental to mobility.

¹ “A Policy on Geometric Design of Highways and Streets.” American Association of State Highway and Transportation Officials, 4th Edition, 2001

²Ibid, Pg. 473.

- **Collector Roads**

Collector roads: collect traffic for movement between arterial roads and local roads; serve through traffic within local areas; provide access to abutting properties; and serve moderate traffic volumes at reduced speeds.

- **Collector, Urban:** *North end of Morgan Hill Road & east end of Raubsville Road*

Urban collector roads provide both access and mobility. They gather traffic from local streets and funnel it into the arterial system. Conversely, they also distribute trips from arterial roads to their ultimate destinations. Access control restrictions on urban collector roads are desirable to ensure optimum mobility.

- **Collector, Major, Rural:** *Island Park Road*

Major rural collectors serve intracounty travel corridors. They serve towns and major points that are not on the arterial system and link them to nearby larger towns and cities or higher-classification roads. According to AASHTO, rural collectors should be designed with the most favorable alignment and cross section practical, consistent with traffic and topography. Accordingly, given the character of Island Park Road, access management is desirable.

- **Collector, Minor Rural:** *Raubsville, Morgan Hill, and Durham Roads*

Minor collectors: collect traffic from local roads, service smaller communities, and link local traffic generators with their rural hinterland. Again AASHTO states that rural collectors should be designed with the most favorable alignment and cross section practical, consistent with traffic and topography. Accordingly, given the character of these roads, access management is desirable.

*Note: Additional collector roads identified in the SALDO and shown on Map 6 are: Cedarville Road, Industrial Drive, Hilton Street, Morvale Road, Berger Road, Gaffney Hill Road, Buttermilk Road, Wassergrass Road, Steely Hill Road, and Brown Drive.

- **Local Roads:** *All roads not classified as arterial or collector*

Local roads provide direct access to abutting properties. They are designed to carry low volumes of traffic at low speeds for short distance trips. A low degree of mobility is desirable, especially where there is a high density of driveways on a local road. Narrow roads help to encourage low travel speeds.

As Williams Township develops, its roads will receive an ever increasing amount of traffic. In a full build-out scenario, traffic volumes would likely exceed the existing capacity of these roadways and bottle-necks would likely occur at key intersections. New development would likely require roads to be upgraded, which may result in the loss of their rural integrity as they take on a more suburban character. The Township must consider the impact of land development on road function, capacity, and character. Where road improvement or widening is undertaken, accommodation should be made for pedestrian and bicycle access while preserving rural character to the maximum extent possible.

Access Management

As explained in the above Functional Classification section, the primary purpose of principal arterial roads is to provide mobility; access is secondary. Access may need to be restricted on some collector roads as well, especially where road conditions are unsuitable. When access to abutting land is not properly

managed it can hamper mobility and create unsafe conditions. Roadway access management techniques are necessary to prevent such situations and correct existing problems.

Common access management techniques include:

- limiting the number of driveway curb cuts
- designing driveways to fit their respective uses
- using shared driveways and internal access where appropriate
- locating driveways away from intersections and other driveways
- providing auxiliary turning lanes when needed

As Williams Township develops, it will be important for it properly manage road access given its hilly, winding, narrow roads and the rate of travel speeds.

Road Improvement Needs

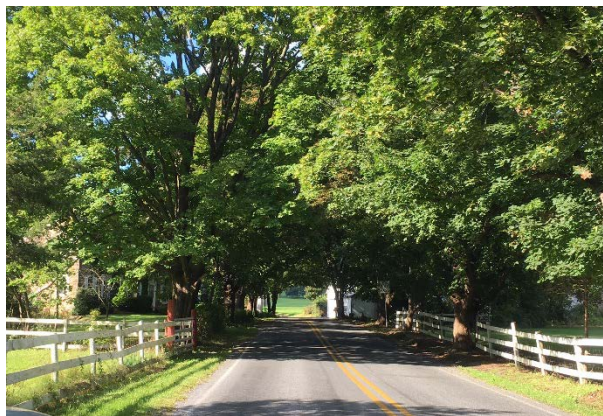
Several existing problematic road conditions were cited by Township residents relating to speeding, access management, and intersections (Map 7). None are included on the LVPC's Transportation Improvement Program.

- **Speeding:** [Morgan Hill Road, PA 611, Raubsville Road, Coffeetown Road, Browns Drive](#)
Excessive speeds are cited on several roads, including Morgan Hill Road, PA 611, Raubsville Road, Coffeetown Road, and Browns Drive. Each of these roads is winding and hilly with numerous driveways along their length that provide access to abutting properties. In addition, several intersections on are cited as having limited sight distance and/or challenging road alignments. Vehicles travelling at excessive speeds create unsafe conditions for other drivers in the roadway and for vehicles entering/exiting abutting driveways and intersections. Speed limit enforcement is conducted by the Pennsylvania State Police.
- **Access Management:** [Turkey Hill Convenience Store on Morgan Hill Road](#)
Ineffective access management for vehicles entering and exiting the Turkey Hill convenience store interrupts the flow of traffic on Morgan Hill Road and creates unsafe driving conditions. Access management improvements are needed. Specific remedies would be determined by a traffic engineering study.
- **Intersections**
Numerous problematic intersections were identified by the Comprehensive Plan Advisory Committee:
 - **Stop Signs**
 - + Raubsville Road and Wassergrass Road – There are no stop signs at this intersection where vehicles frequently travel at high speeds and sight distance approaching the intersection is limited due to topography and road alignments.

- + Texas Road and Cider Press Road – Is a 3-way stop. Vehicles travelling eastbound on Texas Road frequently fail to stop before entering the intersection.
- **Sight Distance/Road Alignment**
In each of the following cases, sight distance is severely limited at the intersection and/or road alignments make navigating the intersection very challenging:
 - + Buttermilk Road and Raubsville Road
 - + Island Park Road and Berger Road
 - + Morvale Road and Morgan Hill Road
 - + Cider Press Road and Morgan Hill Road
 - + Hexenkopf Road, Springfield Road, and Morgan Hill Road
 - + Morgan Hill Road and Raubsville Road
 - + Kressman Road and Coffeetown Road
 - + Durham Road and Stouts Valley Road
 - + Steely Hill and Ballek Road (barn at intersection obstructs sight distance)

Specific intersection improvement needs would be determined by a traffic engineering study. Any improvements should employ “context sensitive design” to retain the rural character of the roadways.

Note: Morgan Hill, Cider Press, Hexenkopf, Raubsville, Durham, and Island Park Roads are state roads.



Rural roads in Williams Township

Scenic Roads

PA 611 (River Road) is identified as a scenic road. It runs along the Delaware River offering scenic views of the river, river valley, canal, and tow path, as well as historic buildings and structures along the river. The road travels along, and provides access to the Delaware Canal National Historic Landmark, Delaware & Lehigh National Heritage Corridor, and the Delaware & Lehigh Pennsylvania Heritage Area.

Any development, signage, or other activity along PA 611 should adhere to design standards that protect the scenic and historic qualities of this nationally significant corridor.



Scenic road PA 611 / River Road (Source: Google Maps)

Public Transportation

Aside from LANTA's LANTaVan door-to-door shared ride or paratransit service (for eligible residents), there is no public transportation service within Williams Township. Instead, residents travel to the Easton Intermodal Transportation Center. From there, LANTA provides local bus service throughout the Lehigh Valley and several other carriers provide bus service points including Philadelphia, New York City, Williamsport, JFK Airport, and Newark Airport.

LVPC and the Mayors of Allentown, Bethlehem, and Easton are advocating the return of passenger rail service to the Lehigh Valley, which ceased operation in 1980s. This would connect the Lehigh Valley to Philadelphia, New York, New Jersey, and Harrisburg via Amtrak. Williams Township supports this initiative.

LVPC's TIP and TAP

LVPC Transportation Improvement Program (TIP)

Transportation improvement projects that propose to use federal funds must be included in the LVPC Transportation Improvement Program (TIP). The TIP, which is published every three years and includes road, bridge, transit, pedestrian, bicycle, and rail improvements, represents the priority transportation projects in the Lehigh Valley. To be listed in the TIP, a project should first be included in the municipal comprehensive plan, trail plan, or other similar adopted plan. From there it must make its way to an LVPC transportation plan, such as a MoveLV plan or the LVPC Comprehensive Plan. It is then evaluated for inclusion in the TIP based on certain criteria.

There are no transportation improvement projects in Williams Township included in the current TIP (covering 2017-2020). If the Township wishes to pursue federal assistance for any road, bridge, transit,

pedestrian, or bicycle improvements included in this Comprehensive Plan or subsequent trail plan, it must engage with LVPC and the Lehigh Valley Transportation Study (LVTS).

LVPC Transportation Alternatives Program (TAP)

“The objective of the Transportation Alternatives Program (TAP) is to fund activities that go beyond the normal or historic elements of a TIP.”³ Among the twelve categories of eligibility are: pedestrian and bicycle facilities of virtually all types, and projects related to scenic or historic roads or sites. Projects that demonstrate added value—such as providing pedestrian and bicycle access to schools, parks, public facilities, and commercial centers—are favored.

Recommendations

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Continue the policy of low density development and farmland and open space preservation in order to minimize demand on the Township’s rural roads resulting from local traffic generation.
- Evaluate existing access management standards in the SALDO and zoning ordinance against current access management best practices and amend the standards as needed. Pursue appropriate restrictions on access to/from PA 611 (arterial road) to preserve its primary function of mobility/through-traffic, and on access to/from the Township’s collector roads, as appropriate given topography, sight lines, and speed limits.
- Engage a traffic engineer and LVPC/LVTS to determine the most appropriate remedies and funding opportunities for the road improvements outlined above. Consider prioritizing the Raubsville Road/Wassergrass Road and Buttermilk Road/Raubsville Road intersections.
- Require all road improvements to employ “context sensitive design” to preserve the rural character of roads.
- Reduce the required street width (currently 24 feet) in single-family residential developments where on-street parking is not a necessity. Unnecessarily large street widths encourage speeding, increase the Township’s maintenance costs, increase the developer’s cost, increase housing prices, and increase impervious cover and stormwater runoff.
- Require a perimeter buffer of open space that retains existing vegetation but does not obstruct scenic views, and locate buildings such that they do not obstruct scenic views from roads or detract from the rural character of roads.
- Adopt a “complete streets” policy, which directs transportation planners and engineers to include design for pedestrian, bicycle, public transit facilities, and landscaping (as applicable) in both new road construction projects and retrofit or road improvement projects.

³ “MoveLV Long Range Transportation Plan,” LVPC, October 13, 2015. Pg. 53

- Consider adopting a traffic impact fee to fund the costs of transportation capital improvements necessitated by and attributable to new development.
- Adopt an Official Map, authorized by Article IV of the MPC, which enables the Township to proactively plan for future roads and pedestrian and bicycle paths/trails.
- Amend the zoning regulations for signage along scenic roads (section 27-1520) to apply to all zoning districts, not just commercial and industrial districts, within 800 feet of the Delaware and Lehigh Canal or a scenic road.
- Support initiatives to restore passenger rail service from the Easton Intermodal Transportation Center

COMMUNITY FACILITIES and UTILITIES PLAN

For the purposes of this Comprehensive Plan, “community facilities and utilities” refers to facilities and utilities provided to residents wholly or in part by the Township. Included in the discussion is emergency services (police, fire, and ambulance), public schools, libraries, parks and recreation, sewer and water facilities, and telecommunications services.

Williams Township’s population is projected to grow to 7,025 by 2030, and could reach 10,500 at full build-out in the future. As the Township’s population increases, so will demands on the facilities and utilities provided to the community. The Township must carefully coordinate the provision of community facilities and utilities with the development pattern advocated by the Future Land Use Plan (Map 2) so that demand can be met in the most economical and efficient manner with the least adverse impact on the Township’s natural and historic resources and rural character.

Objectives

- Provide for community facilities and utilities to meet future demand in a manner that is economical and efficient, has the least adverse impact on the Township’s natural and historic resources and rural character, and enhances residents’ quality of life.
- Establish pedestrian and bicycle paths as development occurs and link these paths to eventually form a network that connects residents to local and regional destinations. This long-range objective recognizes the existing topographical challenges to Williams Township. What makes the Township so beautiful also impedes pedestrian and bicycle circulation. Connectors to the Delaware Canal Trail and Township facilities should be a focus.

Municipal Building

The Williams Township Municipal Building is located on Cider Press Road within the Township Park. It houses the Township’s administrative offices and a public meeting room.

Community Building

The Williams Township Community Building, located next to the Municipal Building, is available for use by Township residents subject to approval of an application for use and payment of a fee.



Williams Township Municipal Building and Community Building (Image Source: Google Maps)

Fire Company

The Williams Township Fire Company No. 1 is an all-volunteer fire company, currently with seventeen active members and seven fire police and outfitted with modern equipment. The fire company is funded by private donations and financial support from the Township. Fire stations are located on Morgan Hill Road in close proximity to the elementary school and municipal building, and in Raubsville.

The fire station on Morgan Hill Road sits on 18 acres and houses a large room for the fire company's social and fundraising functions.

The quality of fire protective service rated highest on the community survey, scoring 3.5 out of 4 points. Lack of volunteers, however, strains the fire company's resources and could compromise its capabilities.

Police

Pennsylvania State Police Troop M provides police protection from the Belfast Barracks, approximately 15 miles north of Raubsville off PA 33.

The quality of police service rated "fair" to "good" on the community survey. Residents indicated that police response times are slow. Approximately 5% of survey respondents suggested that increased police presence would enhance quality of life and 4% suggested that Township needs its own police force. Previous discussions and a study commissioned by the Township in the late 1990s concluded that a regional police substation with service provided by the Hellertown Police Department is cost prohibitive.

Ambulance

Easton Emergency Squad, staffed by both full-time personnel and volunteers, provides ambulance/emergency medical service to Williams Township. The station is located on the southwest side of Easton, approximately 4 ½ miles from Raubsville. It provides basic and advanced life support.

The quality of ambulance service rated "good" on the community survey. However, residents assert that ambulance response times to the southern half of the Township are too long and that the Squad is challenged by a lack of volunteers. Williams Township had its own EMS squad for 46 years, located in Raubsville, but it was forced to close that location and merge with Easton in 2007, apparently due to lack of volunteers. A subsequent study commissioned by the Township concluded that reestablishing a dedicated EMS squad is cost prohibitive.

Public Schools

Williams Township is part of the Wilson Area School District (WASD). In addition to Williams Township, the School District includes Glendon Borough, West Easton, and Wilson Borough. It has three elementary schools, an intermediate school, and high school, and an affiliation with Career Institute of Technology. Williams Elementary School is located on Morgan Hill Road in close proximity to the municipal building and fire station. Township residents attend Williams Elementary for grades K-4, Wilson Area Intermediate School (in Avona) for grades 5-8, and Wilson Area High School (in Wilson Borough) for grades 9-12. Career Institute of Technology, located in Shimerville, offers vocational technical classes.

According to the WASD 2013-2018 Comprehensive Plan, the student population is approximately 2,200. School performance profiles for 2013 show that students across all five district schools performed well on standardized tests (PSSA and Keystone exams), scoring above 80. Williams Elementary and Wilson Elementary scored above 90. Approximately 39% of graduating seniors go on to four-year universities,

38% to two-year or career institutes of higher learning, 7% enter the military, and 15% remain to enter the work force.

Williams Township Elementary School enrollment is approximately 250 students. The school building was renovated and expanded in the 1990s and in 2002 to increase the size to thirty classrooms, including full-size and small group classrooms and a computer lab.

Public Library

Williams Township residents have use of the Mary Meuser Memorial Library (MMML) in Wilson Borough. MMML provides an online catalog of books and materials, e-books, interlibrary loan, computer and internet services, child and adult educational programs, and special events.

Commentary from the Comprehensive Plan Advisory Committee indicates that programs and services at MMML are limited due to budgetary constraints, a small staff, and lack of volunteers. The distance to MMML is also an inconvenience for Williams Township residents; however, a library outpost in the Township several years ago was unsuccessful due to under use. The Township provides annual financial support to MMML and has allocated a \$15,000 contribution in its 2018 budget.

Parks, Recreation, and Trails

Parks and Recreation

Residents appear to be generally satisfied with existing parks and recreational facilities. The availability of parks and recreational facilities scored “good” on the community survey, and the condition of parks and recreational facilities scored slightly higher – “good” to “excellent.” The survey did indicate, though, that there is a need for more activities targeted to seniors.

As the Township develops, the demand for parks and recreational facilities is likely to increase. The Township will need to keep up with demand as development occurs. For an assessment of park and recreation needs and a detailed inventory of the Township’s park and recreation facilities, refer to the *Williams Township Park and Recreation Plan* (adopted in 2010).



Chrin athletic fields



Walking trail at Williams Township Municipal Park

Trails / Pedestrian and Bicycle System

For a detailed discussion of trails, refer to the *Williams Township Park and Recreation Plan* (adopted in 2010).

When asked on the community survey to rate the quality of walkability/pedestrian access, pedestrian safety, bikeability/bike access, and bicycling safety, residents rated each “poor” and scored them lowest among the various facilities and services queried. When asked what the Township needs, hiking/walking trails scored highest (44%) and bike paths scored third highest (36%). Safe walking and biking did not, however, rank in the top five priority issues (it ranked 6th), suggesting that while there is a need and a desire for walking and biking facilities, it is a lower priority than other issues facing the Township.

The Delaware Canal Towpath Trail was frequently cited as a positive community asset.

Indeed, evidence shows that there is little in the way of pedestrian and bicycle infrastructure in the Township, and people walk or bike ride in the roadway. Widening roads to accommodate pedestrians and bicyclists would likely compromise their rural character; therefore, less intrusive off-road paths constructed in a way that retains rural character, if feasible, is preferable. However, where road improvement or widening is undertaken, accommodation should be made for pedestrian and bicycle access while preserving rural character to the maximum extent possible.



Delaware Canal Towpath Trail

Existing Pedestrian and Bicycle System

- **Williams Township Municipal Park** – Contains a 1/3 mile walking trail and nature trail.
- **Mariton Wildlife Sanctuary Trails** – Contains approximately 6 miles of recreational walking/hiking trails.
- **Delaware Canal Towpath Trail** – A 6 mile walking and bicycling trail along the Delaware River in Williams Township. It is part of the 59-mile Delaware Canal Towpath Trail, which connects Bristol to Easton, and the 165-mile D&L Trail from Bristol to Wilkes-Barre.
- **Sidewalks** – According to LVPC’s sidewalk inventory, there are 3.6 miles of sidewalk in the Township compared to 81.7 miles of non-interstate road (or compared to 163.4 miles of non-interstate road, considering that sidewalks are often placed on both sides of the road). Most of these sidewalks—3.3 miles—are concentrated in the Morgan Hill development.
- **Bicycle Facilities** – Aside from the Delaware Canal Towpath Trail, there are no dedicated on-road or off-road bicycle facilities, such as marked bike lanes, bike paths, or bike trails in the Township. Many bicyclists ride on the roads in the Township, which are not marked for such use.

Pedestrian and Bicycle Issues

Residents identified the following issues related to pedestrian and bicycle access and safety:

- There are virtually no other pedestrian paths in the Township aside from the Delaware Canal Towpath Trail and trails in the Municipal Park and Mariton Wildlife Sanctuary
- Pedestrians frequently walk within the roadway, including Tumble Creek Road and Raubsville Road, and perhaps others, which creates unsafe conditions
- Sidewalks are typically not installed in new developments
- Aside from the Delaware Canal Towpath Trail, there are no dedicated bike lanes, bike paths, or bike trails in the Township
- The Township’s scenic, rural roads attract bicyclists; however, these roads are narrow, winding, hilly, have no shoulders in most instances, and are not marked for bicycle use, which creates unsafe conditions.



Pedestrians on Raubsville Road

Because of challenging road conditions, the Township questions the feasibility of establishing a system of on-road or roadside pedestrian and bicycle paths. A combination of on-road and off-road paths would likely be needed in select, suitable locations to form a connected system with the goal of enabling

residents to walk or bike to destinations within the Township and beyond. Pieces of a pedestrian/bicycle network can be established through the land development process by requiring amenities such as sidewalks, paths, and/or trails within developments as they are built and as road improvements occur. Linking those pieces together will help form the larger network. LVPC's 2013 Trail Inventory contains guidelines for designing safe road crossings.

Landowners might also be willing to provide trail easements on their properties for future connections. Trail easements are easier to secure when properties are large and under single ownership. It becomes more difficult as properties subdivide because at that point, securing a trail connection requires easements from multiple landowners rather than one or two owners of large properties.

Water Trails

Water trails are boat routes suitable for canoes, kayaks, and small motorized watercraft. They include day use sites and overnight camping in some locations. There are more than 150 miles of water trails throughout the United States, established through a cooperative effort by residents, businesses, non-profit organizations, and all levels of government.

Delaware River Water Trail – The Delaware River Water Trail stretches 200 miles from Hancock, New York to Trenton, New Jersey. Access points in Williams Township are at Wy-Hit-Tuck County Park, Frys Run County Park, and Theodore Roosevelt Recreation Area.

Lehigh River Water Trail – The Lehigh River Water Trail is 72 miles long, from White Haven to its confluence with the Delaware River at Easton. The nearest access points are in Easton and at Hugh Moore State Park.



Delaware River Water Trail (Image Source: delawareriverwatertrail.org)

Sewage Disposal

Public sewer service is limited to the northernmost section of the Township, serving commercial and industrial uses in the I-78 interchange area, as well as the Morgan Hill and Cedar Park developments. Wastewater is treated at the Easton Area Wastewater Treatment Plant located on PA 611 at Cedarville Road. Township staff indicate that sewer lines north of I-78 experience problems and that a lack of capacity in conveyance lines limits development in that area.

The remainder of the Township is served by private, on-lot septic systems. Township staff report that many on-lot systems are outdated and in disrepair. In Raubsville, septic systems are on small lots where it is difficult to achieve sufficient isolation distance from water wells, and some of these systems are malfunctioning or failing.

Township regulations currently require landowners to repair malfunctioning systems and will continue to do so in order to address any identified problems. Options for Raubsville must also be examined to remedy septic problems, which might include public sewer or a community system. However, extending public sewer can be a catalyst for new development, so, whether in Raubsville or elsewhere, this must be carefully weighed against the Township's desired development pattern and rural character.

This Comprehensive Plan advocates public sewer service in the I-78 interchange area, which is planned for commercial and industrial development and moderate to high density residential development. It does not advocate extension of public sewer into the Agricultural and Low Density Residential Areas. These areas would continue to be served by on-lot septic, but inspections and preventive measures must be enforced to ensure that future problems do not occur, especially as more and more development occurs. The preferred arrangement in the A and LDR areas is Conservation Development with alternative septic disposal located in the required open space area, together with strict enforcement of state and local septic disposal regulations and based on the suitability of soils and geology.

Water Supply

Public water service is limited to the I-78 interchange area. The remainder of the Township relies on private wells for water supply. Dry wells have been reported in the Bougher Hill Road area during times of drought.

Williams Township's SALDO requires all subdivisions and land developments to be served by an on-lot or public water supply system, and may require connection to public water if it deems such connection to be feasible and reasonable. The Township also has an ordinance regulating well construction. In all cases, the Delaware River Basin Commission (DRBC) has regulatory authority of water withdrawals, and a DRBC permit is required for projects that would have a substantial effect on the river basin's waters (i.e. water withdrawal or discharge over certain thresholds established by DRBC).

This Comprehensive Plan advocates public water service in the I-78 interchange area, which is planned for commercial and industrial development and moderate to high density residential development. Water supply will continue to be provided by on-site wells in the Agricultural and Low Density Residential Areas, which are planned for rural development. Where Conservation Development occurs, publicly-owned community or central water supply may be provided. Protection of natural resources is also advocated as a means to protect the Township's water supply, as are water conservation practices.

Recommendations

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Continue to support the Fire Company and assist with volunteer recruitment and retention to the maximum extent possible
- Continue to evaluate options for police protection, including a regional police force or dedicated Township police force
- Continue to evaluate options for EMS service, including an EMS substation located in Williams Township or in closer proximity to the southern half of the Township
- Continue to monitor school enrollment trends and maintain communication with the school district regarding the elementary school property
- Continue to support the Mary Meuser Memorial Library and consider increasing the Township's contribution to previous years' levels
- Implement the recommendations of the Williams Township Park and Recreation Plan, but preserve the rural character of roads when making improvements to include pedestrian and bicycle paths in or alongside roadways
- Amend the SALDO Recreation Fee-In-Lieu ordinance to reference the Township Park and Recreation Plan; consider updating the fee annually, based on land value, via a Township fee schedule or make the fee equal to the value of the land that would otherwise be dedicated; consider including trails
- Update the Township Park and Recreation Plan as needed to ensure it keeps pace with recreation needs resulting from future development and to ensure it supports the SALDO Recreation Fee-In-Lieu ordinance
- Adopt a "complete streets" policy, which directs transportation planners and engineers to include design for pedestrian, bicycle, public transit facilities, and landscaping (as applicable) in both new road construction projects and retrofit or road improvement projects
- Continue to require installation of sidewalks, paths, and/or trails within new developments and require accommodation for future connection to adjoining properties in order to facilitate establishment of a connected system of pedestrian and bicycle paths
- Identify the most suitable, beneficial, and feasible locations for a pedestrian and bicycle network that connects residents to key destinations in the Township and beyond, such as the elementary school, municipal building, Delaware Canal Towpath Trail, and others

- Consult the guidelines for designing safe road crossings included in LVPC's 2013 Trail Inventory
- Coordinate trail planning with natural resource, farmland, and open space protection such that trails can be established within protected open space and natural resource greenways; work to secure trail access easements when conservation or agricultural easements are obtained
- Adopt an Official Map, authorized by the MPC, which enables the Township to proactively plan for future roads and pedestrian and bicycle paths/trails
- Limit public sewer to the I-78 interchange area—which is planned for commercial, industrial, and moderate to high density residential uses—to be consistent with the Township's Act 537 Sewage Facilities Plan.
- Permit alternative sewage disposal in conjunction with Conservation Development in A and LDR zoning districts—in the required open space—to enable protection of open space and farmland
- Continue to strictly enforce requirements for maintenance and repair of individual on-lot septic systems to protect water quality
- Periodically review the Act 537 Sewage Facilities Plan to ensure that sewage facilities planning is consistent with the Township Comprehensive Plan
- Implement recommended natural resource protection standards (see Natural Resource Protection section) in order to protect surface and groundwater supplies
- Amend the zoning ordinance to require a water budget impact analysis and mitigation measures for high consumptive use developments
- Consider adopting wellhead protection buffer zones for central and community water supply wells

HOUSING PLAN

Housing is a basic need and Williams Township is obligated to allow for housing opportunities for all individuals. The federal Fair Housing Act prohibits discriminatory practices, including municipal land use policies and decisions that make housing unavailable to persons because of race or color, religion, sex, national origin, familial status, or disability. The Pennsylvania Municipalities Planning Code (MPC) requires municipalities to provide for sufficient and affordable housing in various forms for all current and anticipated residents. It requires comprehensive plans to include a housing element:

“to meet the housing needs of present residents and of those individuals and families anticipated to reside in the municipality, which may include conservation of presently sound housing, rehabilitation of housing in declining neighborhoods and the accommodation of expected new housing in different dwelling types and at appropriate densities for households of all income levels.”

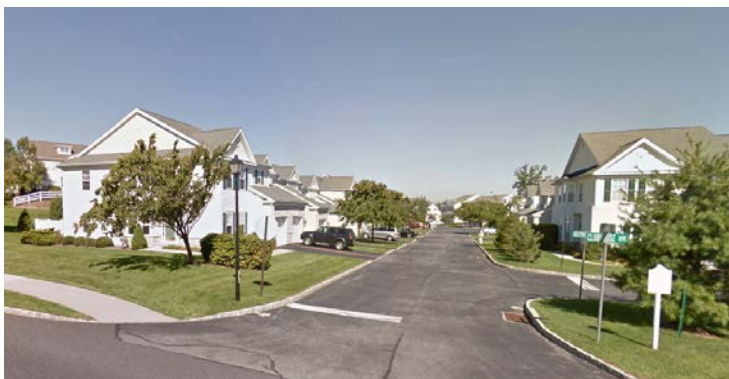
In reference to zoning, the MPC requires zoning ordinances to:

“provide for the use of land within the municipality for residential housing of various dwelling types encompassing all basic forms of housing, including single-family and two-family dwellings, and a reasonable range of multifamily dwellings in various arrangements, mobile homes and mobile home parks, provided, however, that no zoning ordinance shall be deemed invalid for the failure to provide for any other specific dwelling type.”

This MPC provision relates to the “fair share” principle, upheld by the Pennsylvania Supreme Court, which obligates municipalities to provide for their fair share of housing types.

Williams Township accommodates a wide variety of housing types, including single-family detached and single-family attached homes, multi-family homes, and mobile/manufactured homes. In recent years, there has been an increase in the construction of apartments, townhomes, and condominiums in the Township. The Cedar Park development, when completed, will contain 144 apartments and 163 townhomes. The Morgan Hill development, completed in 2006, contains 140 townhomes and 180 condominiums. Abington Manor is a continuing care community with independent living units and assisted living.

Township residents rated the quality of housing “good.” They note that the Township provides a mix of old and new houses and various types of housing in proximity to major highways, but that home prices



Morgan Hill development– townhomes and condominiums



Cedar Park - apartments and townhomes

prevent young people from staying here or moving here. Residents in the northern part of the Township are concerned about the possible impact on home values resulting from the landfill and its potential expansion, while others are concerned about the lack of property maintenance in what seems to be isolated instances throughout the Township.

Objectives

- Provide for housing that meets the needs of current and future Township residents, and is in harmony with the Township's historical and natural environments.
- Protect the existing housing stock and provide for varied housing options to accommodate various household configurations at various life-stages and income levels.

Housing Unit Growth

The number of housing units in Williams Township has risen over the last several decades, increasing by 16% from 1990 to 2000 and by 46% from 2000 to 2010 (Table 8-1). Housing unit growth far outpaced regional growth in the last decade.

It is estimated that an additional 213 units are currently pending construction and proposed for development and will be completed by 2020.

Table 8-1

Municipality	1990 Census	2000 Census	2010 Census	# Change 1990-2000	% Change 1990-2000	# Change 2000-2010	% Change 2000-2010
Williams Township	1,504	1,738	2,537	234	16%	799	46%
Northampton County	95,345	106,710	120,363	11,365	12%	13,653	13%
LVPC Region	213,680	235,620	262,976	21,940	10%	27,356	12%

Source: U.S. Census Bureau

Housing Type

Williams Township accommodates a variety of housing types. Although predominantly single-family detached, the Township also provides for attached townhomes, two-family homes, and condominiums and apartments in multi-unit structures (Table 8-2). Of an estimated 2,585 total housing units, approximately 27% are types other than single-family detached.

Table 8-2

Housing Type	Estimate	MOE*	% of Total	% MOE*
Total housing units	2,585	+/-142	(X)	(X)
1-unit, detached	1,867	+/-137	72.20%	+/-5.0
1-unit, attached	322	+/-106	12.50%	+/-3.8
2 units	40	+/-62	1.50%	+/-2.4
3 or 4 units	13	+/-22	0.50%	+/-0.8
5 to 9 units	141	+/-104	5.50%	+/-4.0
10 to 19 units	80	+/-78	3.10%	+/-3.0
20 or more units	61	+/-60	2.40%	+/-2.3
Mobile home	61	+/-69	2.40%	+/-2.6
Boat, RV, van, etc.	0	+/-14	0.00%	+/-0.9

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

MOE = Margin of Error

Housing Occupancy and Tenure

Housing occupancy (occupied/vacant) data show that a large portion of the Township's units are occupied (approximately 88%), but the percentage of vacant units, even when adjusted for the margin of error, is slightly high (Table 8-3). The high rental vacancy rate (15%) would suggest either an oversupply of rental units, or unaffordable or substandard units that cannot be rented (note, however, that the high margin of error makes it difficult to draw any conclusions about the Township's rental housing).

Housing tenure (owner/renter) data show that the bulk of occupied units are owner occupied, while approximately 14% are renter occupied. Household size is approximately 2.65 persons per owner occupied units and 2.48 persons per rental unit.

Table 8-3

Housing Tenure and Occupancy	Estimate	% of Total	MOE	% MOE
Housing Occupancy				
Total Housing Units	2585		142	
Occupied Units	2279	88.2%	138	4.4
Vacant Units	306	11.8%	121	4.4
Homeowner Vacancy Rate	0		1.1	
Rental Vacancy Rate	15		16.7	
Housing Tenure				
Total Occupied Units	2279		138	
Owner Occupied Units	1951	85.6%	166	5.3%
Renter Occupied Units	328	14.4%	124	5.3%
Owner, Avg persons per household	2.65		0.18	
Renter, Avg persons per household	2.48		0.43	

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

House Value and Gross Rent

House value data provide a breakdown of the number of owner-occupied housing units within each value range. More than half of the homes in Williams Township are valued above \$200,000 (Table 8-4). The median home value is approximately \$279,600 (Table 8-4). The data suggest that more than half of the Township's rental units have a gross rent at \$1,500 or more, but large proportion of rentals (approximately 37%) have a gross rent of less than \$1000 (Table 8-5). Median gross rent is approximately \$1,583.

Table 8-4

House Value	Estimate	MOE	Percent	% MOE
Occupied units	1,951	+/-166	1,951	(X)
Less than \$50,000	100	+/-66	5.10%	+/-3.3
\$50,000 to \$99,999	48	+/-44	2.50%	+/-2.2
\$100,000 to \$149,999	97	+/-49	5.00%	+/-2.5
\$150,000 to \$199,999	298	+/-132	15.30%	+/-6.7
\$200,000 to \$299,999	523	+/-135	26.80%	+/-6.3
\$300,000 to \$499,999	619	+/-134	31.70%	+/-6.5
\$500,000 to \$999,999	231	+/-121	11.80%	+/-6.1
\$1,000,000 or more	35	+/-39	1.80%	+/-1.9
Median (dollars)	279,600	+/-32,330	(X)	(X)

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

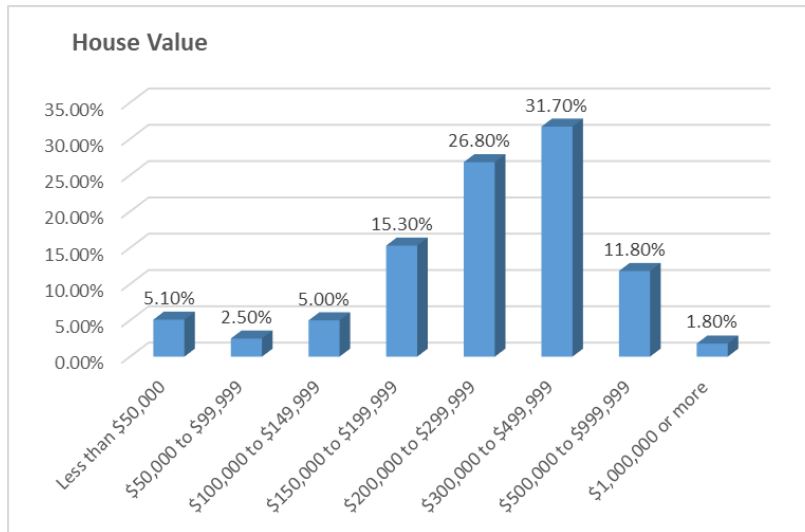
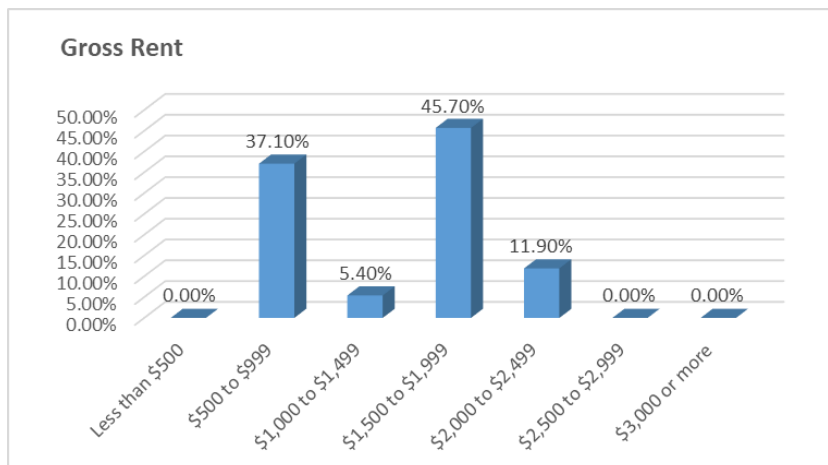


Table 8-5

Gross Rent	Estimate	MOE	Percent	% MOE
Occupied units paying rent	278	+/-108	278	(X)
Less than \$500	0	+/-14	0.00%	+/-7.8
\$500 to \$999	103	+/-82	37.10%	+/-22.6
\$1,000 to \$1,499	15	+/-24	5.40%	+/-8.6
\$1,500 to \$1,999	127	+/-62	45.70%	+/-19.7
\$2,000 to \$2,499	33	+/-37	11.90%	+/-12.6
\$2,500 to \$2,999	0	+/-14	0.00%	+/-7.8
\$3,000 or more	0	+/-14	0.00%	+/-7.8
Median (dollars)	1,583	+/-356	(X)	(X)

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates



Housing Affordability

Affordable housing is generally defined as annual owner costs or gross rent less than or equal to 30% of a household's gross income. For owners, housing costs include mortgage payment, taxes, insurance, association fees, and utilities. For renters, housing costs include rent and utilities. "Cost burden" is the fraction of a household's total gross income spent on housing costs. Cost burden greater than 30% means that the household spends more than 30% of its income on housing costs and the unit is unaffordable.

The data suggest that a large proportion of households in Williams Township carry a cost burden of 30% or more, making their housing unaffordable. Approximately 25% of households with a mortgage and 26% of renters might be cost-burdened, according to estimates (Table 8-5).

The presence of cost burdened households in the Township may be a consequence of some households intentionally living beyond their means, a need for rehabilitation of substandard units, a need for additional affordable housing units, or a combination of these factors.

Table 8-6

Housing Affordability	Estimate	MOE	Percent	% MOE
Housing units with a mortgage	1,463	+/-155	1,463	(X)
Housing costs 30.0 to 34.9 percent of income	126	+/-90	8.60%	+/-6.0
Housing Cost 35.0 percent or more of income	235	+/-98	16.10%	+/-6.1
Occupied rental units paying rent	278	+/-108	278	(X)
Housing costs 30.0 to 34.9 percent of income	0	+/-14	0.00%	+/-7.8
Housing Cost 35.0 percent or more of income	72	+/-54	25.90%	+/-16.4

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Planning Implications

Williams Township provides for a variety of housing types. Higher density housing types, including townhomes, condominiums, apartments, and manufactured homes are accommodated in the north of the Township near the I-78 interchange and the City of Easton – an area where connection to public sewer and water is most feasible. Two mobile home parks are located in the Township's northeastern corner on PA 611. Single-family detached homes are primarily accommodated in the central and south of the Township. The Future Land Use Plan continues this pattern.



Higher density housing near I-78 interchange



Lower density housing in the Township's interior

Although the Township's housing stock is varied, data suggest the possibility of a high percentage of cost-burdened households and that housing affordability is a challenge for many Township residents. This might also present a barrier to young individuals and families that wish to own or rent a home in the Township. Housing costs are largely market-driven, but the Township can influence affordability by zoning for various housing types and densities that promote affordability, and by providing incentives to developers to include affordable housing units in their developments.

Williams Township will continue to advance policies to meet the housing needs of current and future residents. It will do its part to ensure the integrity of the housing stock and residential neighborhoods, and it will encourage development of new housing that is accessible to households of various configurations and at various life-stages and income levels. Housing development will be coordinated with existing infrastructure, community facilities, and commercial/retail services in order to minimize the need for infrastructure expansion and maximize residents' accessibility to facilities and services.

Recommendations

These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion:

- Continue to permit a variety of housing types, with moderate and high density housing types located in proximity to the I-78 interchange and the City of Easton – an area where connection to public sewer and water is most feasible.
- Permit a mix of housing types, including apartments on upper floors of commercial buildings (mixed-use) in areas that permit commercial development, as appropriate.
- Require affordable units or provide incentives to developers to encourage them to include a specified percentage of affordable dwelling units in development projects involving residential use.
- Permit accessory dwelling units in appropriate zoning districts (where lot area dimensions will accommodate such uses) as a means to provide affordable housing options to enable older relatives to reside near family, and enable residents to age in place.
- Continue to enforce ordinances and property maintenance codes to address unkempt properties.
- Review the zoning ordinance to ensure that it is consistent with the Fair Housing Act and the MPC.

IMPLEMENTATION STRATEGIES

This chapter outlines an action plan the Township may take to implement the comprehensive plan's recommendations and advance the community's vision for its future. The general timeframe for action, responsible party, and potential partners and funding sources are identified. Recommendations are detailed in the preceding chapters and are summarized in the following pages. These recommendations are not mandates; rather they are actions that Township officials can take into consideration and implement at their discretion. An individual or a committee should oversee and monitor implementation of this comprehensive plan and the local community and partners should be involved. These implementation strategies should be consulted regularly to ensure the Township is making progress.

Priority Issues

◆ Open Space & Farmland Preservation ◆ Natural Resource Protection ◆ Historic Resource Protection

Community Development Objectives

- ◆ Provide for use of land in a manner that will preserve the Township's open spaces, farmlands, and natural and historic resources while accommodating development in a manner consistent with existing and planned infrastructure and development patterns. This involves: (1) providing for planned development of the I-78/Morgan Hill Road North corridor, which provides improved traffic safety and appropriate interchange-type commercial development, and (2) providing for low density and conservation development in much of the remainder of the Township.
- ◆ Protect natural resources for their economic, health, and recreation benefits and for their contribution to the Township's rural character and scenic beauty.
- ◆ Establish a connected network of healthy and functioning natural resource features that will provide a natural infrastructure system ("green infrastructure"), protect habitats, and facilitate wildlife movement.
- ◆ Protect historic resources to ensure their continued contribution to the Township's rural character and scenic beauty, and to capitalize on their economic, cultural, and educational benefits.
- ◆ Maintain the rural integrity of the Township's roadways while safely and efficiently accommodating an appropriate level of vehicular traffic given roadway function and capacity.
- ◆ Support Easton's initiative to establish a rail link between Philadelphia and New York City.
- ◆ Provide for community facilities and utilities to meet future demand in a manner that is economical and efficient, has the least adverse impact on the Township's natural and historic resources and rural character, and enhances residents' quality of life.
- ◆ Establish pedestrian and bicycle paths as development occurs and link these paths to eventually form a network that connects residents to local and regional destinations. This long-range objective recognizes existing topographical challenges. What makes the Township so beautiful also impedes pedestrian and bicycle circulation. Connectors to the Delaware Canal Trail and Township facilities should be a focus.
- ◆ Provide for housing that meets the needs of current and future Township residents, and is in harmony with the Township's historical and natural environments.
- ◆ Protect the existing housing stock and provide for varied housing options to accommodate various household configurations at various life-stages and income levels

Immediate	Strategy	Responsibility	Potential Partners	Completed (✓)
	Appoint Implementation Leader / Committee	BOS		
	1. Appoint an individual or create a committee comprised of representatives of various township boards to spearhead, oversee, and monitor the implementation process. The individual/committee should meet regularly and maintain communication with committees and partners involved with implementation.			
	Raise Awareness	Twp Mgr		
	2. Make the comprehensive plan available. Post the comprehensive plan on the township website and make a hard copy available at the township office. Encourage all township staff, board and committee members, and consultants to read the plan.			
	Organize for Implementation	BOS		
3. Continue to support the Land Preservation Board 4. Appoint a Historical Commission to spearhead historic resource preservation efforts 5. Appoint an Ordinance Committee/Task Force to spearhead ordinance amendments (Zoning, SALDO, Official Map, Traffic Impact Fee, etc.) 6. Appoint a Park and Recreation Board to spearhead implementation of the Township's 2011 Park and Recreation Plan				

Short Range	Strategy	Responsible Party	Potential Partners	Completed(✓)
	Prioritize Open Space, Conduct Outreach	Land Preservation Bd.	Consultant	
	7. Systematically identify and prioritize land for preservation using a prioritization scheme similar to that discussed in the Natural Resource Protection chapter. 8. Once identified, conduct outreach and education to landowners on topics of agricultural easements, conservation easements, and development rights.			
	Hold Referendum on Open Space Funding	BOS		
	9. Consider holding a referendum on reinstatement of the Earned Income Tax for the purpose of funding open space preservation			
	Inventory/Survey Historic Resources, Conduct Outreach	Historical Comm or Wms Twp Hist Soc	Consultant, Wms Twp Hist Soc	
	10. Consider conducting a historic resources inventory or survey to produce an updated list and map of historic resources and supporting data. The Township should consider contracting with a professional architectural historian or historic preservation consultant who will be conversant in state and national standards for conducting historic resource inventories and surveys. This will ensure that the updated inventory or survey will properly support any future historic resource preservation programs, initiatives, or ordinances. The professional would work with the local historical society and utilize its resources and knowledge base to the extent possible. 11. Once inventoried/surveyed, conduct outreach to owners of historic resources regarding the sale and/or donation of preservation easements.			
	Address Intersection Improvements	BOS, Twp Mgr	Engineer, State Police	
12. Consider engaging with a traffic engineer and with LVPC/LVTS to determine the most appropriate remedies and funding opportunities for the road improvements specified in this comprehensive plan. Consider prioritizing the Raubsville Road/Wassergrass Road and Buttermilk Road/Raubsville Road intersections				

	Strategy	Responsible Party	Potential Partners	Completed (✓)
	Review and Amend Zoning Ordinance	Ordinance Committee	Consultant	
Short Range	13. Consider amending the zoning ordinance Part 4 (Agricultural District), Part 5 (Low Density Residential District), and Part 19 (Conservation Development) to: 13a. Make it clear that conservation development is an optional use 13b. Create additional incentive to encourage the use of conservation development 13c. Ensure that the required open space percentage, required minimum lot size, and required on-lot water and sewer do not preclude the use of conservation development 13d. Consider reducing the minimum lot size and permitting septic disposal in part of the open space or via a community septic system so that more open space can be preserved 13e. Ensure that an appropriate amount of the required open space in conservation development can be used for recreation or similar community use 13f. Ensure that natural resources are protected within the dedicated open space area 14. Consider amending the zoning ordinance Part 15 (Environmental Preservation Required) to clarify which subsections apply to conservation development and which subsections apply to conventional subdivision. For example, does the calculation of “adjusted tract area” and “base density” apply to conventional subdivision plans? Do the “steep slopes” regulations apply to conservation development? 15. Consider amending the SC – Special Conservation District to permit only those uses that are compatible with conservation (i.e., consider removing golf courses and residential development). 16. Consider amending the zoning ordinance to permit mixed use in LC- Local Commercial District (i.e., residential and commercial use in the same building, such as a retail or office use on the first floor and an apartment on the second floor). 17. Consider amending the zoning ordinance to include an overlay district that would enable creation of the Potential Town Center Area. 18. Continue to provide for moderate to high density residential development, and commercial and industrial land use in the northern portion of the Township near the I-78 interchange. 19. Consider permitting only low-impact, conservation oriented land uses on slopes over 25% 20. Consider expanding sinkhole/carbonate geology regulations to all development activity in carbonate areas, rather than new development only. This would include single family homes and the alteration of single family homes to include detached structures. 21. Consider making the steep slope disturbance limits applicable to all land uses 22. Consider decreasing the steep slope disturbance limits 23. Consider specifying limits for impervious cover in steep slope areas 24. Continue to ensure that floodplain regulations comply with at least the minimum federal and state requirements 25. Consider amending the zoning ordinance so that the floodplain regulations apply as an overlay district, and specify which uses are permitted in the floodplain area 26. Consider prohibiting new structures and fill in the 100-year floodplain, except for certain necessary infrastructure (consistent with the County’s comprehensive plan). At most, allow new structures and fill only by variance and only when the applicant demonstrates that the impact on flood heights and velocities, when combined with all other existing and anticipated development in the watershed (i.e., cumulative impact), can be adequately offset 27. Consider prohibiting “development which may endanger human life,” hospitals, nursing homes, jails or prisons, and manufactured homes in the floodplain 28. Consider strictly limiting impervious cover in the floodplain 29. Consider amending the setback from surface waters to establish a 100-foot setback (“riparian buffer”) on streams, rivers, and wetlands, and an additional 50-foot setback (150 feet total) on all HQ and EV streams, rivers, and wetlands. This would be generally consistent with PA Chapter 102. At a minimum, the setback should be 100-feet on streams, rivers, and wetlands and would prohibit all earth disturbance with limited exceptions for trails, certain PA permitted activities,			

Review and Amend Zoning Ordinance - - - (continued)

Short Range	<p>invasive species management, removal of a hazard, and historic resources. An extensive review of the research on riparian buffers concludes that a minimum 100-foot forested riparian buffer is needed to achieve a minimum level of protection of water quality and stream ecosystems.¹ Consider extending the setback on the Delaware River to 100 feet from the floodplain, as recommended by the PA Natural Heritage Areas Program.²</p> <ol style="list-style-type: none"> 30. Review all stormwater management and erosion and sedimentation control ordinances to ensure they do not conflict 31. Review surface water setback, canal setback, scenic road setback, and floodplain setback provisions to resolve any potential conflicts 32. Consider removing “golf course” as a permitted use in the Special Conservation (SC) district and where allowed in other zoning districts, permit Audubon International certified golf courses only 33. Consider prohibiting disturbance of areas of hydric soils (i.e., soils where the water table is at or near the land surface) 34. Consider requiring a water budget impact analysis and mitigation measures for land uses and developments that meet certain criteria, which would require evidence that water use will not exceed sustainable groundwater and surface water supplies and requires mitigation measures in cases where demand will exceed supply. 35. Consider prohibiting disturbance of hydric soils (this could be done through the Township’s stream setback standards) 36. Consider limiting development on soils with drainage limitations or a high water table 37. Consider removing the nine conditions under which trees can be removed 38. Consider removing the exemption for property owners upon issuance of a certificate of occupancy, making tree protection applicable to all properties, but provide an exception for agriculture and to allow for customary lot improvements (e.g. exempt tree removal up to X square feet on a lot that is not related to a subdivision or land development) 39. Consider limiting the percentage of woodlands and forests that can be cleared 40. Define standards for tree protection, especially during construction 41. Consider requiring protection of specimen trees except where the tree presents a hazard or is diseased as determined by a certified arborist 42. Consider requiring that areas of preserved woodland and forest be contiguous and connect to woodlands/forests on adjacent properties in order to preserve large, intact woodlands/forests and woodland/forest corridors 43. To ensure preservation of high quality woodlands/forests and habitats, consider requiring a detailed woodland/forest habitat assessment wherever clearing is proposed, and wherever possible, require preservation of the higher quality woodlands/forests over the lower quality ones. 44. Update forestry standards and ensure they do not conflict with the tree and forest protection standards 45. Consider giving high priority to interior forests when evaluating land for open space preservation 46. Consider prohibiting the planting of invasive species 47. Consider requiring a minimum percentage of native species when tree and vegetative plantings are required 48. Consider requiring a variety of species when tree and vegetative plantings are required in order to minimize the risk of widespread disease 49. Consider requiring protection of significant vegetation and hedgerows 50. Consider prohibiting disturbance of core habitat areas and strictly limit disturbance of their associated supporting landscapes (see PNHP mapping) 51. Consider including core habitats and supporting landscapes in protected open space when a land development occurs
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¹ Sweeney, Bernard and J. Denis Newbold, “Streamside Forest Buffer Width Needed to Protect Stream Water Quality, Habitat, and Organisms: A Literature Review.” Journal of the American Water Resources Association, Vol. 50, No. 3, June 2014.

² Pg. 148

Review and Amend Zoning Ordinance - - - (continued)

Short Range	52. Consider including basic historic resource protection measures in the form of a zoning overlay district that applies to properties containing a historic resource as listed in the updated inventory/survey. Provisions would be limited to:
	52a. Allowing a historic resource to be used for a purpose other than its original use (known as “adaptive reuse”)
	52b. Allowing modifications of modern area and bulk standards that are not compatible with the historic resource in order to increase the potential for its use
	52c. Requiring the submission of an application for demolition, removal, or relocation of historic resources, including intentional demolition and demolition by neglect, and providing for a review of demolition applications by the historical commission in order to assess possible alternatives to demolition, removal or relocation
	52d. Providing guidelines for rehabilitation of historic resources
	53. Consider providing incentives to protect historic resources, such as:
	53a. Giving a development density bonus for providing open space adjoining a historic resource
	53b. Giving a development density bonus for renovation or adaptive reuse of a historic structure into a dwelling unit or other use and requiring preservation of the structure’s historic integrity
	54. Consider evaluating existing access management standards in the SALDO and zoning ordinance against current access management best practices and amend the standards as needed. Pursue appropriate restrictions on access to/from PA 611 (arterial road) to preserve its primary function of mobility/through-traffic, and on access to/from the Township’s collector roads, as appropriate given topography, sight lines, and speed limits.
	55. Consider requiring a perimeter buffer of open space that retains existing vegetation but does not obstruct scenic views, and locate buildings such that they do not obstruct scenic views from roads or detract from the rural character of roads.
	56. Consider amending the zoning regulations for signage along scenic roads (section 27-1520) to apply to all zoning districts, not just commercial and industrial districts, within 800 feet of the Delaware and Lehigh Canal or a scenic road.
	57. Consider adopting wellhead protection buffer zones for central and community water supply wells
	58. Continue to permit a variety of housing types, with moderate and high density housing types located in proximity to the I-78 interchange and the City of Easton – an area where connection to public sewer and water is most feasible.
	59. Consider permitting a mix of housing types, including apartments on upper floors of commercial buildings (mixed-use) in areas that permit commercial development, as appropriate.
	60. Consider requiring affordable units or provide incentives to developers to encourage them to include a specified percentage of affordable dwelling units in development projects involving residential use.
	61. Consider permitting accessory dwelling units in appropriate zoning districts (where lot area dimensions will accommodate such uses) as a means to provide affordable housing options to enable older relatives to reside near family, and enable residents to age in place.
	62. Continue to enforce ordinances and property maintenance codes to address unkempt properties.
	63. Review the zoning ordinance to ensure that it is consistent with the Fair Housing Act and the MPC

Short Range	Strategy	Responsible Party	Potential Partners	Completed (✓)
	Review and Amend SALDO	Ordinance Committee	Consultant	
	64. Consider reviewing and amending the SALDO to ensure consistency with the Zoning Ordinance’s conservation design provisions, natural resource provisions, and other provisions 65. Consider requiring site plans to depict, all natural resource categories contained in this comprehensive plan 66. Consider expanding sinkhole/carbonate geology regulations to all development activity in carbonate areas, rather than new development only. This would include single family homes and the alteration of single family homes to include detached structures.			

Review and Amend SALDO - - - (continued)

Short Range	<ol style="list-style-type: none"> 67. Conduct a review of sinkhole/carbonate geology ordinance regulations to ensure they are up to date and adequate. 68. Consider identifying wetlands and aquifer recharge areas (and/or require applicants for subdivision or land development to identify these resources) and implement appropriate protection measures. (current mapping is based on National Wetlands Inventory data, which does not capture all existing wetlands and aquifer recharge areas; therefore, local field identification is required). 69. Consider amending the SALDO to require a wetland delineation in all cases where wetlands might exist on the site. This would be consistent with the zoning ordinance's requirement for a wetland delineation (Section 27-1504.1). 70. Consider requiring identification of woodlands and forests, mature trees, specimen trees, and hedgerows on site plans along with identification of trees proposed for removal and locations of replacement trees 71. Define "large trees," "mature groves of trees," "specimen trees," and "prime" or "high quality woodland" (prime/high quality woodland would include healthy, mature, reproducing woodlands that support important ecological functions and habitats) 72. Define parameters for what is considered a "preserved tree" 73. Consider providing tree replacement standards, applicable when mature trees are removed, whereby the number, type, and sizes of replacement trees are scaled according to the number, type, and sizes of removed trees and the quality of woodland habitat being disrupted. 74. Consider removing the street tree exemption for single-family detached residential lots with a lot area greater than two acres 75. Consider requiring a meeting with the applicant and/or site contractor and a registered landscape architect (acting on behalf of the Township) prior to any clearing or site disturbance to examine ways to minimize tree loss, and require inspection by landscape 76. Consider requiring applicants to delineate core habitats and supporting landscapes on plans (see PNHP mapping) 77. Consider providing a credit toward open space requirements if historic resources are preserved in accordance with certain specified conditions 78. Consider requiring plan submissions to identify all types of historic resources (i.e., consistent with those listed on the Township's inventory/survey as described above) 79. Consider requiring a historic resource impact study (under certain specified conditions) and mitigation of impacts on historic resources 80. Consider evaluating existing access management standards in the SALDO and zoning ordinance against current access management best practices and amend the standards as needed. Pursue appropriate restrictions on access to/from PA 611 (arterial road) to preserve its primary function of mobility/through-traffic, and on access to/from the Township's collector roads, as appropriate given topography, sight lines, and speed limits. 81. Consider requiring all road improvements to employ "context sensitive design" to preserve the rural character of roads 82. Consider reducing the required street width (currently 24 feet) in single-family residential developments where on-street parking is not a necessity. [Unnecessarily large street widths encourage speeding, increase the Township's maintenance costs, increase the developer's cost, increase housing prices, and increase impervious cover and stormwater runoff.] 83. Consider requiring a perimeter buffer of open space that retains existing vegetation but does not obstruct scenic views, and locate buildings such that they do not obstruct scenic views from roads or detract from the rural character of roads 84. Consider amending the SALDO Recreation Fee-In-Lieu ordinance to reference the Township Park and Recreation Plan; consider updating the fee annually, based on land value, via a Township fee schedule or make the fee equal to the value of the land that would otherwise be dedicated; consider including trails 85. Continue to require sidewalks, paths, and/or trails within new developments and require accommodation for future connection to adjoining properties in order to facilitate establishment of a connected system of pedestrian and bicycle paths
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Long Range	Strategy	Responsible Party	Potential Partners	Completed (✓)
	Support Delaware River as a National Wild & Scenic River	Board of Supervisors	National Park Service, DRBC	
	86. Following the process for National Wild and Scenic Rivers Act designation, consider officially registering support for designation of the stretch of the Delaware River that runs through Williams Township. (See: https://www.lowerdelawarewildandscenic.org/about/lower-delaware-wild-and-scenic-info-sheet).			
	ID Wetlands in Delaware River-Frys Run Watershed	Land Preservation Board	College/University, Land Conservancy, DCNR, Wetland Scientist	
	87. In the Delaware River-Frys Run Watershed, consider the following: identify existing wetlands, locations of historic wetlands, and wetlands that are in the process of recovering; pursue wetland restoration under the guidance of a professional; connect wetlands via natural greenways.			
	Update Park & Recreation Plan	Planning Commission/Park & Rec Board	Certified Park & Rec Planner	
	88. Update the Township Park and Recreation Plan as needed to ensure it keeps pace with recreation needs resulting from future development and to ensure it supports the SALDO Recreation Fee-In-Lieu ordinance			
	Adopt Complete Streets Policy	Board of Supervisors	Planning Consultant	
	89. Consider adopting a “complete streets” policy, which directs transportation planners and engineers to include design for pedestrian, bicycle, public transit facilities, and landscaping (as applicable) in both new road construction projects and retrofit or road improvement projects			
	Adopt a Traffic Impact Fee	Board of Supervisors	Planning Consultant, Traffic Engineer	
90. Consider adopting a traffic impact fee to fund the costs of transportation capital improvements necessitated by and attributable to new development.				
	Adopt an Official Map	Board of Supervisors	Planning Consultant	
	91. Consider adopting an Official Map, authorized by Article IV of the MPC, which enables the Township to proactively plan for future public lands and facilities, such as parks, open space, roads, and pedestrian paths			

On - Going	Strategy	Responsible Party	Potential Partners	Completed (✓)
	Involve the Community	Twp Mgr, Various Twp Committees	Community Members	
	92. Distribute a quarterly or bi-annual township newsletter that includes educational material related to the various comprehensive plan topics and/or excerpts from the comprehensive plan			
	93. Post the comprehensive plan on the Township website and feature related educational material and progress made on implementation			
	94. Hold regular community-building social and educational events that highlight the Township’s natural, historical, and cultural assets			
	95. Advertise the Township’s need for volunteers (e.g. fire company volunteers, etc)			
	Secure Agricultural and Conservation Easements	Board of Supervisors	Landowners, County, State, Land Conservancies	
	96. Continue to utilize dedicated Township funds for the preservation of farmland and open space and continue to partner with the state, county, and land conservancies			

On - Going	97. Facilitate awareness among owners of properties with existing conservation and agricultural easements of the role those properties play in the local and regional greenways/blueways system and the need for their stewardship of resources on their properties			
	Upgrade Stream Designations	Land Preservation Board	PA DEP	
	98. Continue to investigate possible upgrades to stream existing and designated use classifications			
	Use Environmentally Sound Maintenance Practices	Twp Maintenance Staff	DRBC	
	99. Do not use chemical sprays or other potentially toxic agents for weed or pest control, especially near waterbodies and along the Delaware Canal. Use only natural weed and pest control methods			
	Pursue Conservation Actions for Core Habitats	Land Preservation Board	Consultant	
	100. Consider pursuing the conservation actions listed for each of the habitat areas in the Natural Resources Protection chapter. For more details on the habitats and conservation actions see <i>Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013</i> at: http://www.naturalheritage.state.pa.us/CNAI_PDFs/Lehigh%20and%20Northampton%20CNHI_update_2013.pdf			
	Foster Awareness of the Township's Historic Resources	Historical Commission, Historical Society	Consultant	
101. Consider conducting outreach to owners of historic resources regarding the sale and/or donation of preservation easements (see "Preservation Easements" above). 102. Incorporate historic resources into recreation and trail planning in order to bring people closer to those resources. Utilize interpretive signs to raise awareness of the resources and their history. This is an immediate possibility along the Delaware Canal Towpath Trail. 103. Continue to identify and document historic resources and where warranted, submit nominations for listing on the National Register. Identify and evaluate historic landscapes that warrant protection through inclusion in open space. 104. Consider conducting public outreach and education on the Township's historic resources. This could include featuring a historic site and/or information about historic preservation in each edition of the township newsletter and/or on the township website, creating an actual or virtual tour of historic buildings, holding events related to the Township's history and historic resources, and hosting educational programs for area students.				

On - Going	Strategy	Responsible Party	Potential Partners	Completed (✓)
	Continue to Support and Monitor Public Services	Twp Mgr, Various Twp Committees	Community Members	
	105. Continue to support the Fire Company and assist with volunteer recruitment and retention to the maximum extent possible			
	106. Continue to evaluate options for police protection, including a regional police force or dedicated Township police force			
	107. Continue to evaluate options for EMS service, including an EMS substation located in Williams Township or in closer proximity to the southern half of the Township			
	108. Continue to monitor school enrollment trends and maintain communication with the school district regarding the elementary school property			
	109. Continue to support the Mary Meuser Memorial Library and consider increasing the Township's contribution to previous years' levels			

On - Going	Implement the Park and Recreation Plan	Board of Supervisors	Landowners, County, State, Land Conservancies	
	110. Continue to implement the recommendations of the Williams Township Park and Recreation Plan, but preserve the rural character of roads when making improvements to include pedestrian and bicycle paths in or alongside roadways			
	Enforce Septic System Maintenance Regulations and Monitor Sewage Facilities Plan	Sewage Enforcement Officer	PA DEP, Twp Engineer	
	111. Continue to strictly enforce requirements for maintenance and repair of individual on-lot septic systems to protect water quality 112. Limit public sewer to the I-78 interchange area—which is planned for commercial, industrial, and moderate to high density residential uses—to be consistent with the Township’s Act 537 Sewage Facilities Plan 113. Periodically review the Act 537 Sewage Facilities Plan to ensure that sewage facilities planning is consistent with the Township Comprehensive Plan			
	Support passenger Rail Service from Easton	Board of Supervisors	DRBC	
	114. Support initiatives to restore passenger rail service from the Easton Intermodal Transportation Center			
	Enforce Property Maintenance Codes	Zoning Officer	Consultant	
	115. Continue to enforce ordinances and property maintenance codes to address unkempt properties			

Appendix A

DEMOGRAPHIC PROFILE

This section examines data on population, age, education, income, and employment to gain a general understanding of the Township's demographic characteristics. Data from the LVPC, US Census, and 2016 American Community Survey estimates are used.

The data suggest that Williams Township has been growing at a rapid rate compared to the LVPC region and is expected to continue growing through 2030. The Land Use Plan (see section 3) supports this finding. The Township also appears to be aging rapidly and has a higher median age compared to the LVPC region. This will have implications for housing and other services targeted to seniors. Finally, in comparison to the LVPC region, Williams Township residents are well-educated and work in occupations that tend to pay higher wages, which is reflected in the Township's high median household income.

Population

Table A-1 shows population from 2000 to 2016 for Williams Township, Northampton County, and Lehigh County.

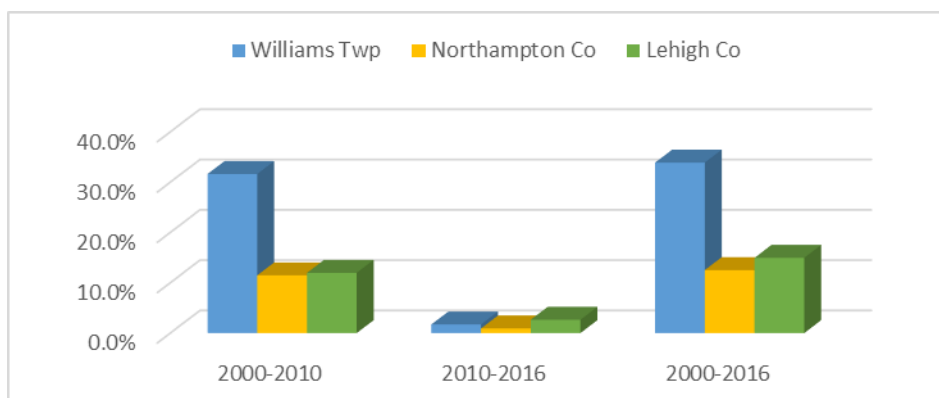
- Population growth in Williams Township far exceeds the LVPC region in the ten year period from 2000 to 2010 (31.6%) and in the 16 year period from 2000 to 2016 (33.9%).
- The township experienced rather low population growth in the last six years, even considering the margin of error in the 2016 population estimate (+/-39).

Table A-1: Population 2000-2016

Municipality	2000 Census	2010 Census	2016 Estimate	2016 MOE*	# Change 2000-2010	% Change 2000-2010	# Change 2010-2016	% Change 2010-2016	# Change 2000-2016	% Change 2000-2016
Williams Twp	4,470	5,884	5,985	+/-39	1,414	31.6%	101	1.7%	1,515	33.9%
Northampton Co	267,066	297,735	300,520	(X)	30,669	11.5%	2,785	0.9%	33,454	12.5%
Lehigh Co	312,090	349,497	358,792	(X)	37,407	12.0%	9,295	2.7%	46,702	15.0%

Source: U.S. Census Bureau; 2012-2016 ACS 5-Year Estimates

*MOE = Margin of Error



Population Projections

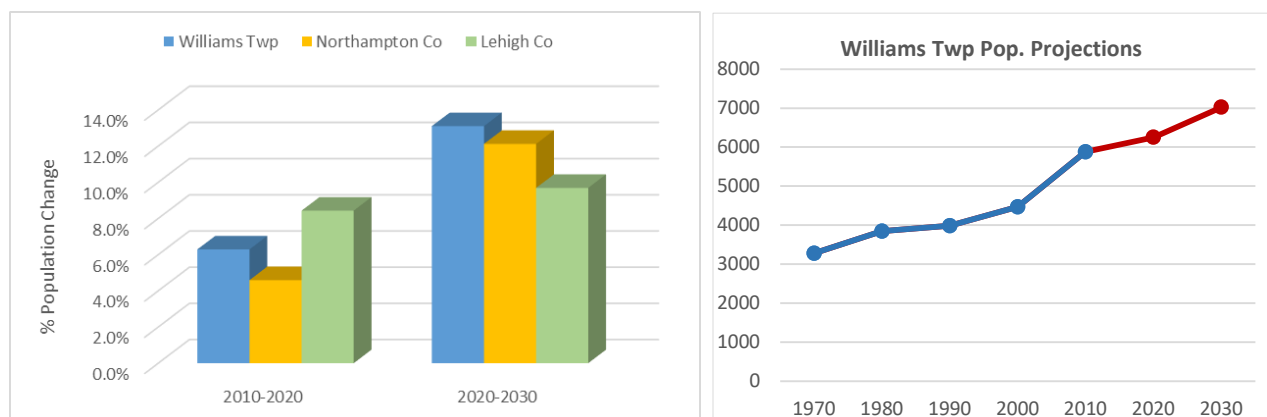
Table A-2 shows population projection for 2020 and 2030.

- Williams Township's population is projected to increase 6.3% by 2020 and 13.1% by 2030.
- Projected population growth in the Township in the 20 year period from 2010 to 2030 (19.4%) slightly exceeds the level of growth in the LVPC region.
- An analysis of land use and population impacts contained in the Land Use chapter suggests that the Township is on track to reach the 2020 and 2030 population projections.

Table A-2: Population Projections 2020 and 2030

Municipality	2010 Census	2020 Projection	2030 Projection	# Change 2010-2020	% Change 2010-2020	# Change 2020-2030	% Change 2020-2030	# Change 2010-2030	% Change 2010-2030
Williams Twp	5,884	6,254	7,025	370	6.3%	771	13.1%	1,141	19.4%
Northampton Co	297,735	311,406	347,494	13,671	4.6%	36,088	12.1%	49,759	16.7%
Lehigh Co	349,497	378,968	412,832	29,471	8.4%	33,864	9.7%	63,335	18.1%

Source: "The People: Population and Employment Projections 2017," LVPC. www.lvpc.org



Population by Age

Table A-3 shows the age characteristics of Williams Township's population, along with median age for the Township and the region. Note that the large margin of error in the 2016 estimates makes it difficult draw any conclusions about the current age profile.

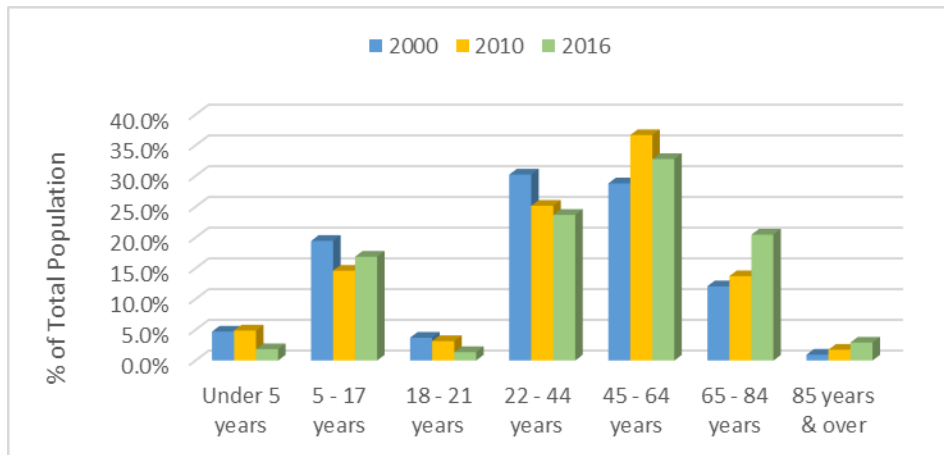
- The percentage of pre-school and school-aged children appears to be on the decline since 2000
- The percentage of young workers (22-44 years) appears to be on the decline since 2000
- The percentage of mature worker, retirees, and seniors appears to be on the rise since 2000
- The Township's median age increased dramatically from 2000 to 2010 and is much higher than that of the LVPC region.

Table A-3: Population by Age

Age	2000 Census	2000 % of Total	2010 Census	2010 % of Total	2016 Estimate	2016 MOE	2016 % of Total
Under 5 years	211	4.7%	287	4.9%	111	+/-106	1.9%
5 - 17 years	870	19.5%	860	14.6%	1,011	+/-574	16.9%
18 - 21 years	166	3.7%	186	3.2%	82	+/-148	1.4%
22 - 44 years	1,352	30.2%	1,481	25.2%	1,418	+/-811	23.7%
45 - 64 years	1,288	28.8%	2,158	36.7%	1,962	+/-809	32.8%
65 - 84 years	540	12.1%	808	13.7%	1,226	+/-696	20.5%
85 years & over	43	1.0%	104	1.8%	175	+/-129	2.9%
Median Age - Williams Twp	40.7		46.2		49.3	+/-2.4	
Median Age - Northampton Co	38.5		40.9		41.9	+/-0.2	
Median Age - Lehigh Co	38		39.4		39.5	+/-0.2	

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

MOE = Margin of Error



Educational Attainment

The highest level of education attained by residents aged 25 years and over is shown in Table A-4.

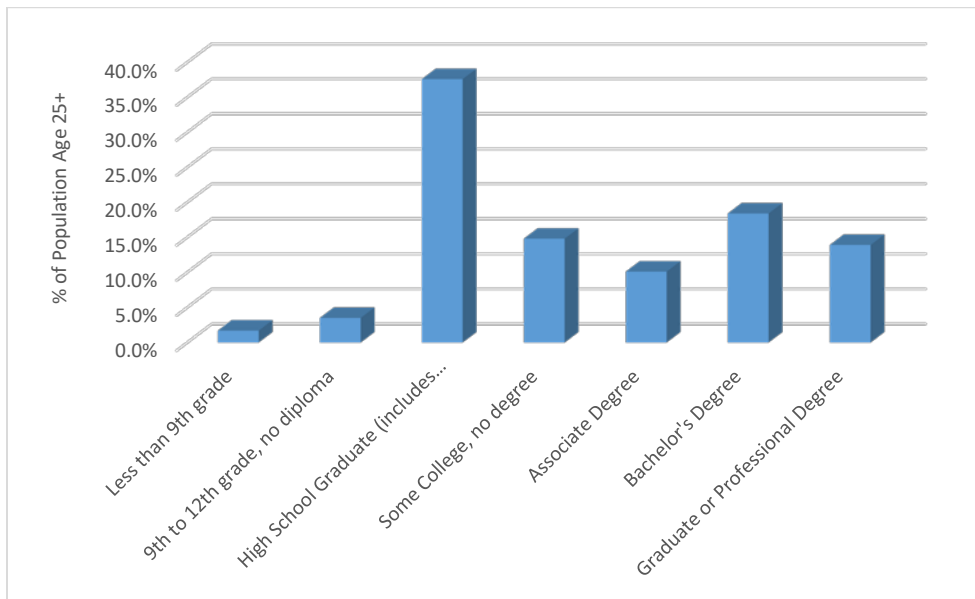
- Approximately 38% of Williams Township residents have attained a high school diploma or equivalency, followed by 32% of with a bachelor's degree or graduate or professional degree.
- Williams Township has a level of educational attainment compared to the LVPC region (32.3% of residents with a bachelor's degree or higher, compared to Northampton County's 27.9% and Lehigh County's 28.9%).
- The Township's higher educational attainment corresponds to its employment/occupational characteristics and its comparatively higher income levels.

Table A-4: Educational Attainment

Educational Attainment	Williams Twp				NorthamptonCo		Lehigh Co	
	# Persons	# MOE	% of Total	% MOE	% of Total	% MOE	% of Total	% MOE
Population 25 years and over	4,640	+/-217	(X)	(X)				
Less than 9th grade	81	+/-93	1.7%	+/-2.0				
9th to 12th grade, no diploma	161	+/-94	3.5%	+/-2.0				
High School Graduate (includes equivalency)	1,745	+/-270	37.6%	+/-5.5				
Some College, no degree	685	+/-198	14.8%	+/-4.0				
Associate Degree	469	+/-142	10.1%	+/-3.0				
Bachelor's Degree	853	+/-194	18.4%	+/-4.3				
Graduate or Professional Degree	646	+/-162	13.9%	+/-3.5				
High School Graduate or Higher	(X)	(X)	94.8%	+/-2.4	90.4%	+/-0.4	88.10%	+/-0.5
Bachelor's Degree or Higher	(X)	(X)	32.3%	+/-5.6	27.9%	+/-0.7	28.90%	+/-0.6

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

MOE = Margin of Error



Income

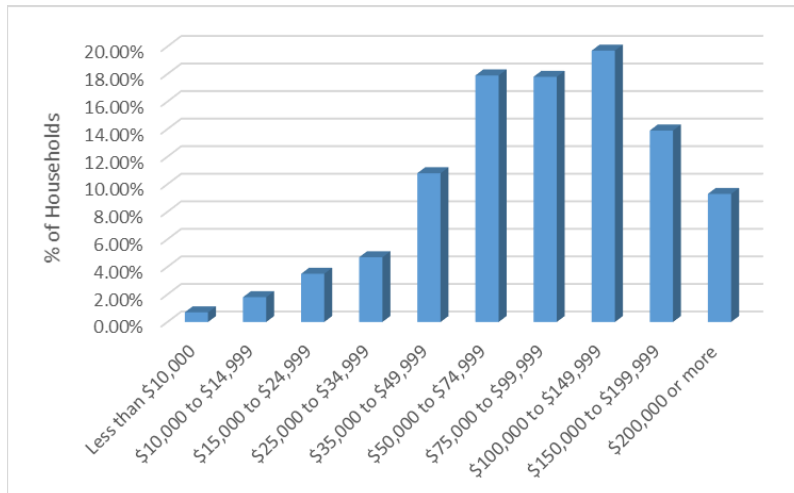
Table A-5 shows household annual income data.

- Household annual income in Williams Township skews toward the middle to higher income ranges, above \$50,000.
- The Township's estimated median household income (\$90,777) is higher than that of the LVPC region (\$62,753 for Northampton County and \$57,685 for Lehigh County).
- The Township's higher income corresponds to the comparatively higher educational and income levels.

Table A-5: Household Annual Income

Household Income	% of Households	% MOE
Total	2,279	+/-138
Less than \$10,000	0.70%	+/-1.1
\$10,000 to \$14,999	1.80%	+/-2.0
\$15,000 to \$24,999	3.50%	+/-2.4
\$25,000 to \$34,999	4.70%	+/-2.7
\$35,000 to \$49,999	10.80%	+/-4.9
\$50,000 to \$74,999	17.90%	+/-6.7
\$75,000 to \$99,999	17.80%	+/-5.6
\$100,000 to \$149,999	19.70%	+/-5.1
\$150,000 to \$199,999	13.90%	+/-5.5
\$200,000 or more	9.30%	+/-3.8
Median Household Income - Williams Twp	90,777	+/-6,154
Median Household Income - Northampton Co	62,753	+/-1,411
Median Household Income - Lehigh Co	57,685	+/-1,210

Source: 2012-2016 American Community Survey 5-Year Estimates



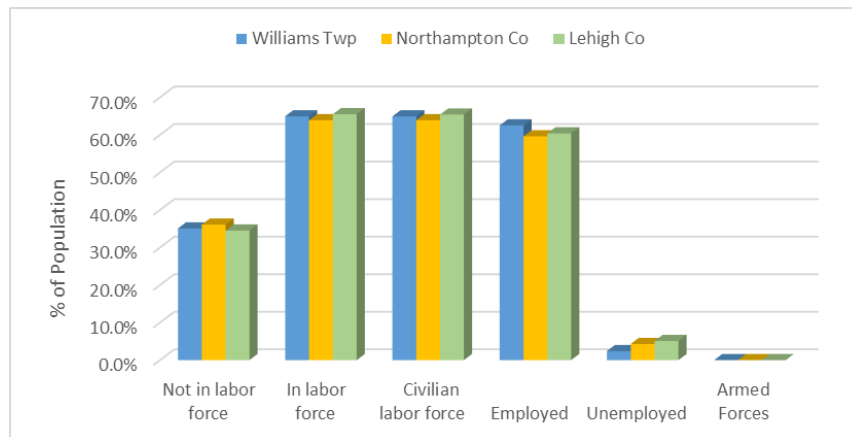
Employment Status

Table 6 contains data pertaining to the labor force.

- Williams Township appears to have a healthy labor force with approximately 65% of residents over the age of 16 in the work force and approximately 62.5 of those persons employed.
- The Township's percentage of unemployed is lower than that of the LVPC region (2.4% compared to 4.3% for Northampton County and 5.1% for Lehigh County).

Table A-6: Employment Status

Employment Status	Williams Twp				Northampton Co		Lehigh Co	
	# of Persons	# MOE	% of Total	% MOE	% of Total	% MOE	% of Total	% MOE
Population 16 years and over	5,018	+/-222						
Not in labor force	1,760	+/-204	35.1%	+/- 3.5	36.1%	+/- 0.5	34.50%	+/- 0.5
In labor force	3,258	+/-210	64.9%	+/- 3.5	63.9%	+/- 0.5	65.50%	+/- 0.5
Civilian labor force	3,258	+/-210	64.9%	+/- 3.5	63.9%	+/- 0.5	65.40%	+/- 0.5
Employed	3,137	+/-203	62.5%	+/- 3.6	59.6%	+/- 0.6	60.40%	+/- 0.5
Unemployed	121	+/-66	2.4%	+/- 1.3	4.3%	+/- 0.3	5.10%	+/- 0.3
Armed Forces	0	+/-14	0.0%	+/- 0.4	0.0%	+/- 0.1	0.00%	+/- 0.1



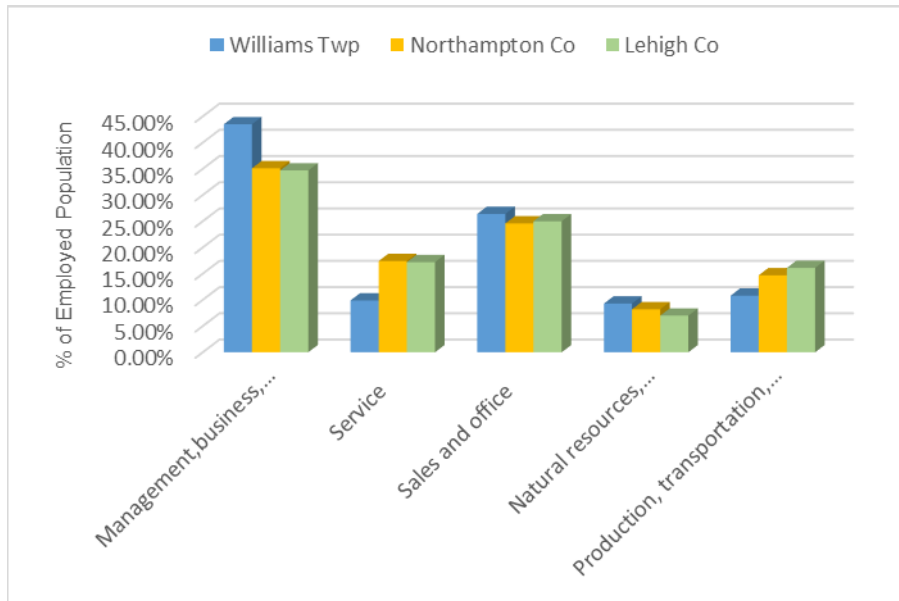
Employment - Occupation

Table A-7 shows the types of occupations in which residents are employed.

- The largest of percentage of Williams Township residents works in management, business, science, and arts occupations (~43.5%); the second largest percentage works in sales and office occupations (~26.4%).
- Among the lowest percentage in Williams Township are service occupations (~9.9%); this compares to approximately 17% in Northampton and Lehigh Counties.
- The occupational characteristics of the Township correspond to its comparatively higher educational and income levels.

Table A-7: Occupation

Occupation	Williams Twp				Northampton Co		Lehigh Co	
	# Persons	# MOE	% of Total	% MOE	% of Total	% MOE	% of Total	% MOE
Employed civilian population 16 years and over	3,137	+/-203	(X)	(X)	(X)	(X)	(X)	(X)
Management,business, science, arts	1,366	+/-251	43.50%	+/-7.1	35.10%	+/-0.9	34.70%	+/-0.8
Service	311	+/-133	9.90%	+/-4.1	17.40%	+/-0.7	17.20%	+/-0.6
Sales and office	829	+/-180	26.40%	+/-5.0	24.60%	+/-0.7	25.00%	+/-0.8
Natural resources, construction, maintenance	291	+/-98	9.30%	+/-3.2	8.20%	+/-0.5	7.00%	+/-0.4
Production, transportation, material moving	340	+/-125	10.80%	+/-4.2	14.70%	+/-0.7	16.10%	+/-0.7



Appendix B

HIGHWAY INTERCHANGE AREA PLANNING GUIDELINES

The highway interchange area planning guidelines on the following pages are extracted from the Williams Township 1989 Comprehensive Plan and 2000 Supplement.

Appendix C

HISTORIC RESOURCES

(List of Historic Resources from 1989/2000 Comprehensive Plan)

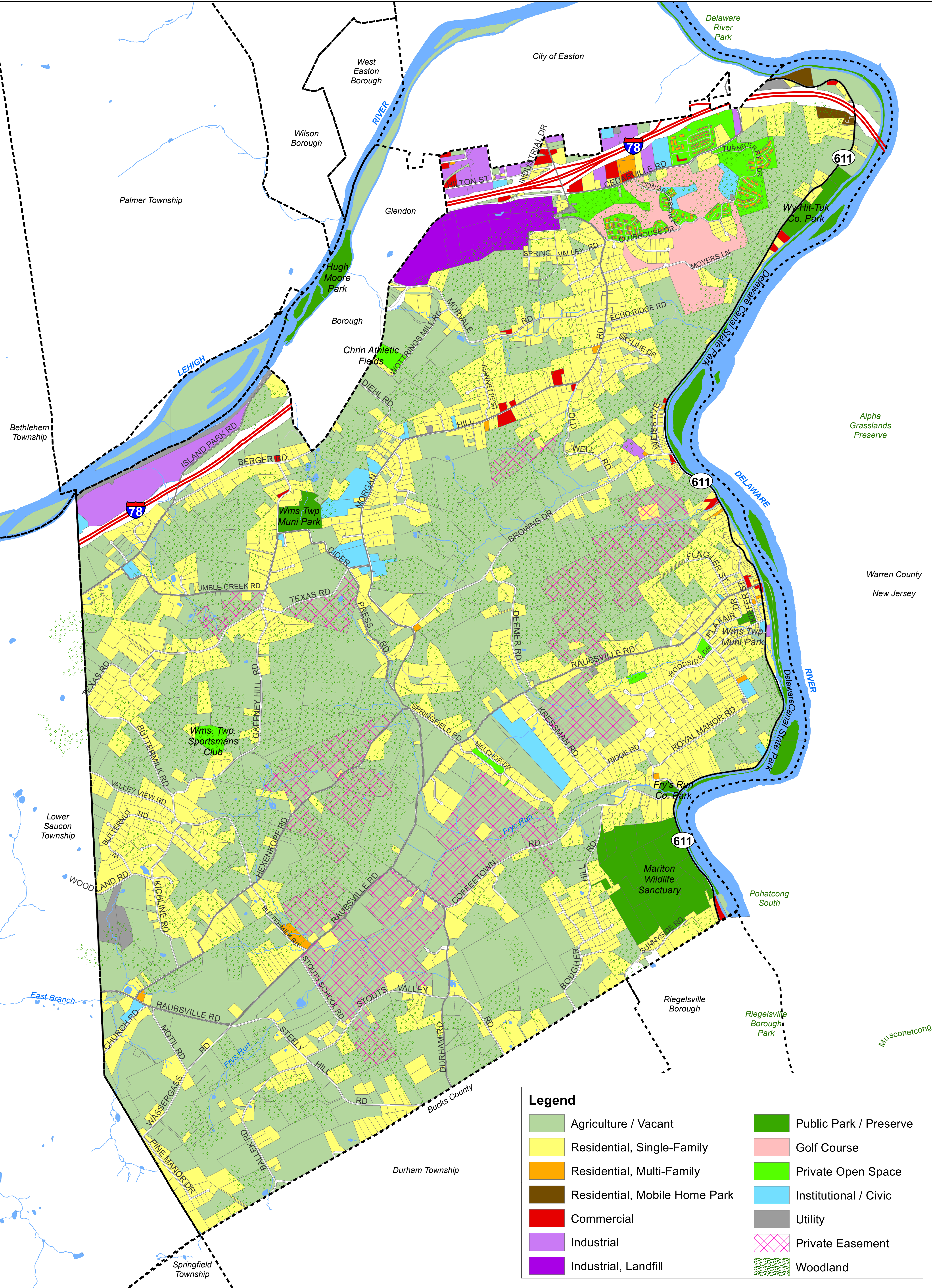
The following list of 60 historic resources is extracted from the Williams Township 1989 Comprehensive Plan and 2000 Supplement. The original list was compiled in 1970 and was updated in 1976. This list should be updated again, as recommended in the Historic Resource Protection Plan beginning on page 5-1.

1. The Lattig (Skaggs) Home
2. The Richard (Wagner) Home
3. The Richard (Cavallo) Home
4. The Richard (Isaac) Home
5. The Black Horse Tavern
6. The Seiffert (Bradstreet) Home
7. Lofty Oaks Inn (The Link Home)
8. Hineline Store (Waltman Home)
9. The Mammy Morgan Home (no longer standing)
10. The Best (Rhoads) Home
11. Woodring Grist Mill (Hafer Home)
12. The Allen (Wagner) Home
13. The Wagner (Helm) Homestead
14. Union Hotel (The John Murray Home)
15. Snug Harbor (Malye Home)
16. The Sharrer (Weller) Home
17. The Blum (Rankin) Home
18. The Lantz (Houser) Home
19. The Saylor (Horth) Home
20. The Unangst (Mammana) Home
21. The Raub (Anthony) Home
22. The Raubsville Hotel
23. The Raub (Kreutzberg) Home
24. The Wilhelm (Patriarca) Home
25. The Wilhelm (Heller) Home
26. The Deemer Homestead
27. The Arndt (Melchor) Home
28. The Arndt (Bonstein) Home
29. The Knecht (Melchor--Bach Echo) Farmstead
30. The Krumrine (Koch) Home
31. Moritz Grist Mill (The Paul Beidler Home)
32. The Kline (Delahunty) Home
33. The Kline (Heindel) Home
34. The Laubach (Van Vliet) Home
35. The Laubach (Melchor) Farm
36. The Miller (Szmodis) Home
37. The Shimer (Szmodis) Home
38. The Shimer (Pektor) Home
39. The Stout (Bachman) Home
40. The Stout (Seipt) Home
41. The Stout (Hindenach) Home
42. The Stout (Thaler) Farm

43. Coffeetown Grist Mill (The Peter Beidler Home)
44. The Coffeetown Miller's House No. 1 (The Schultz Home)
45. The Coffeetown Miller's House No. 2 (The Dunbar Home)
46. The Fry (Kressman) Home
47. The Coffeetown Miller's House No. 3 (The Hugo-Wunderly Home)
48. The Raub (Stryker) Home, Formerly the Raul Hotel
49. The Kleinhans (Smith) Home
50. The Koplin (Hoover) Home
51. The Bachman (Konia) Home
52. The Bachman (Ivenz) Home
53. The Bachman (Kachline) Home
54. The Bougher (Hoyt) Home
55. Ground Hog Locks - Uhlersville
56. The Uhler (Weiss) Home
57. The Transue (Parker-Lauer) Home
58. The Grube (Anderson) Home
59. The Hessian House (Service Home)
60. The Wolbach (Hamilton) Home

Appendix D

MAPS

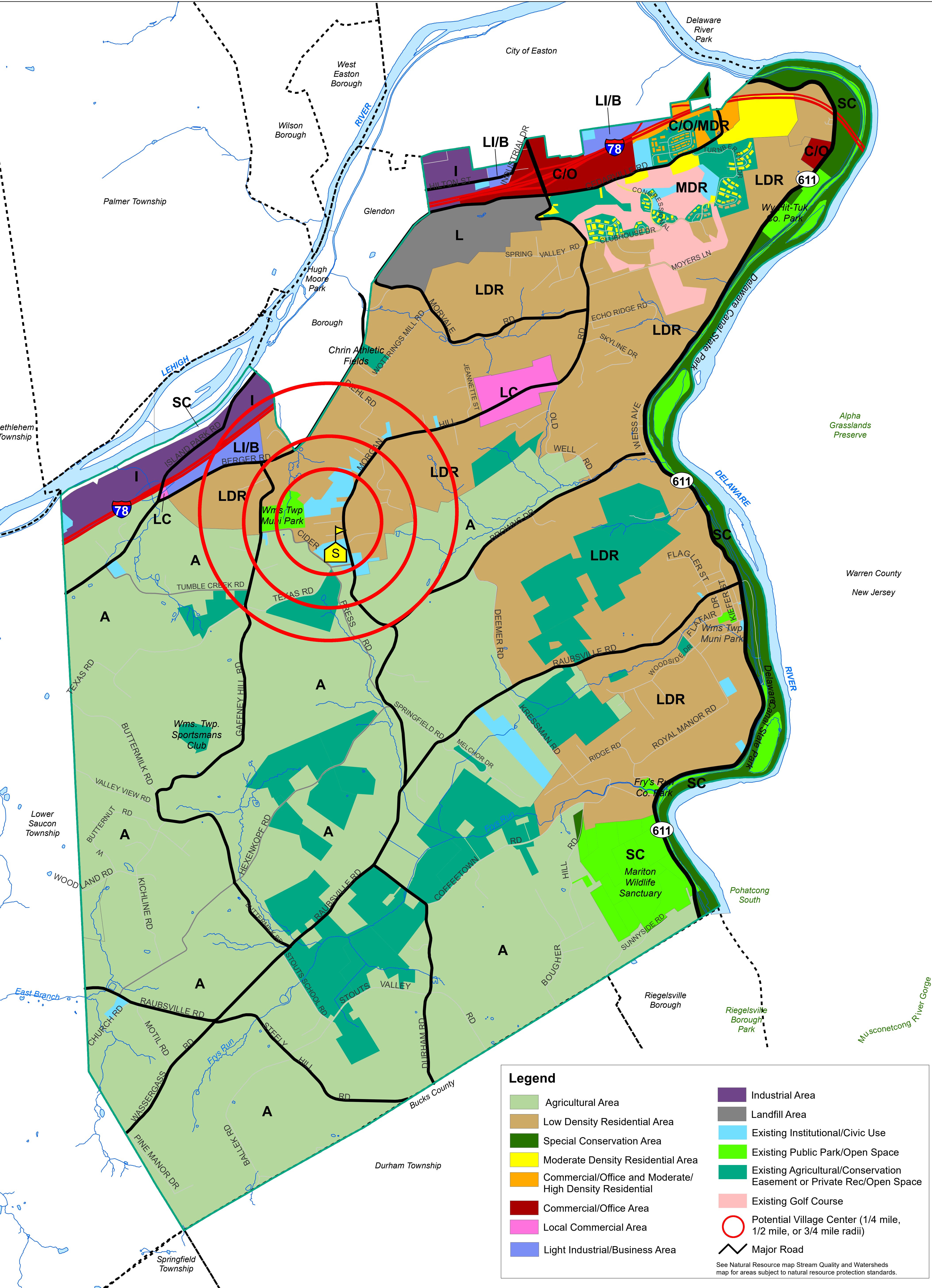


Map 1
Existing Land Use
2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania

Tax parcel data provided by
Northampton County GIS, 10/2016;
Easements: LVPC, 02/2017

Map prepared by:
Sarcinello
Planning & GIS Services

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Map 2

Future Land Use Plan

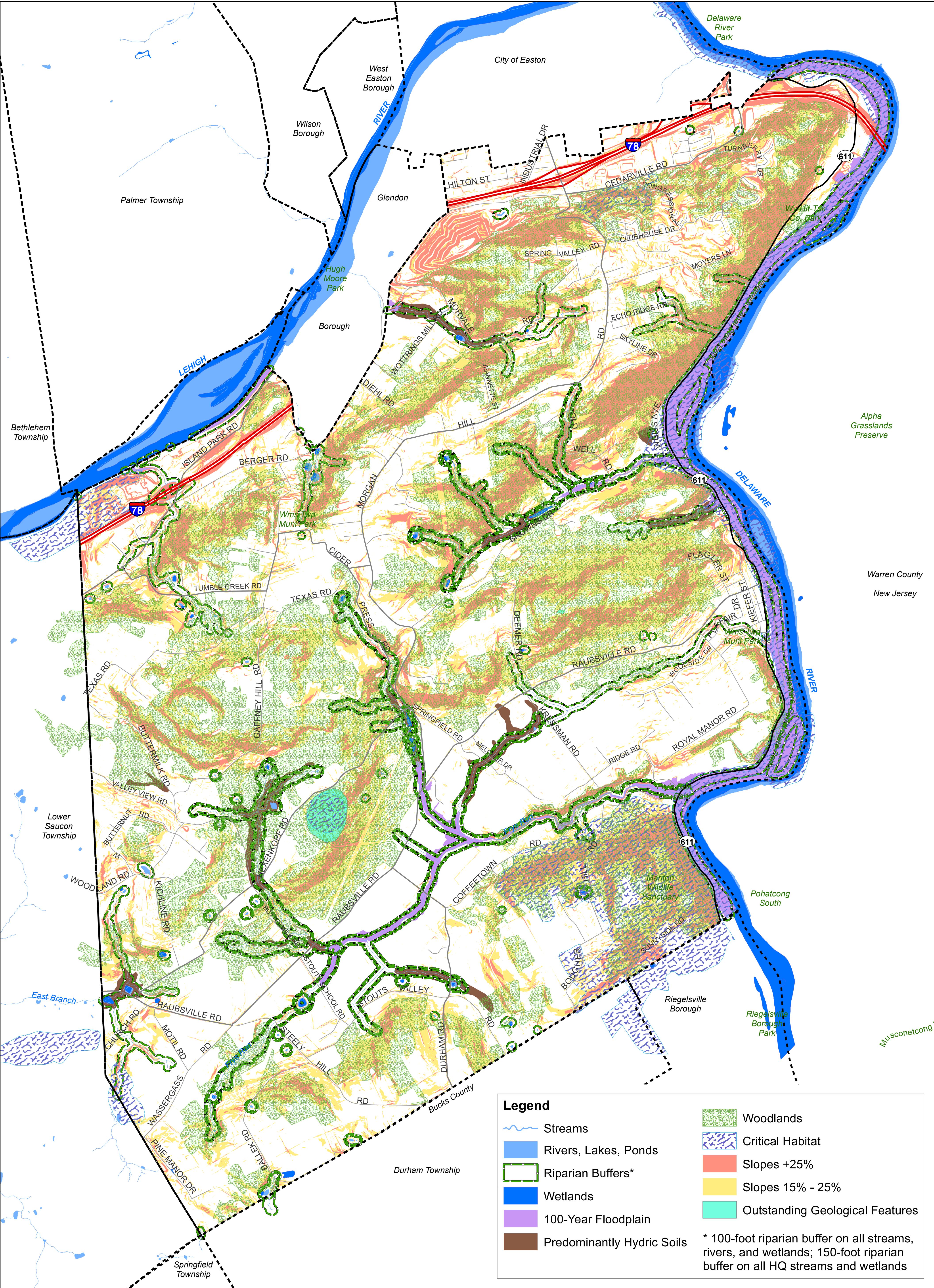
2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania

Tax parcel data provided by
Northampton County GIS, 10/2016;
Easements: LVPC, 02/2017

Map prepared by:

Sarcinello
Planning & GIS Services

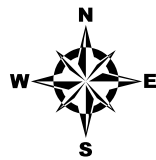
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Map 3

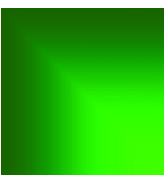
Natural Resource Protection Plan

2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania



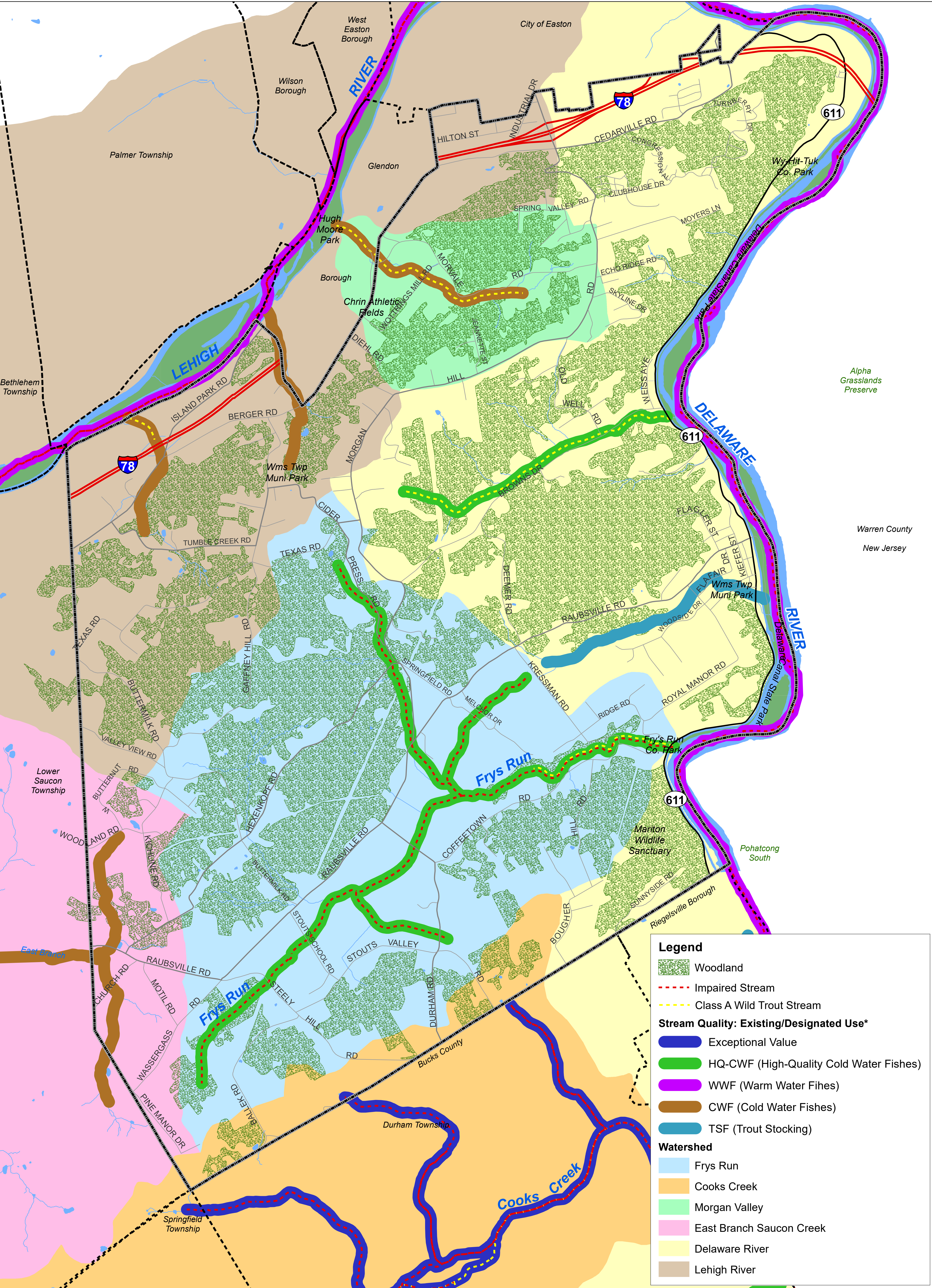
Data Sources: LVPC, FEMA, NWI,
PA Natural Heritage Program, USDA
SSURGO Database

Map prepared by:



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Map 4

Stream Quality & Watersheds

2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania

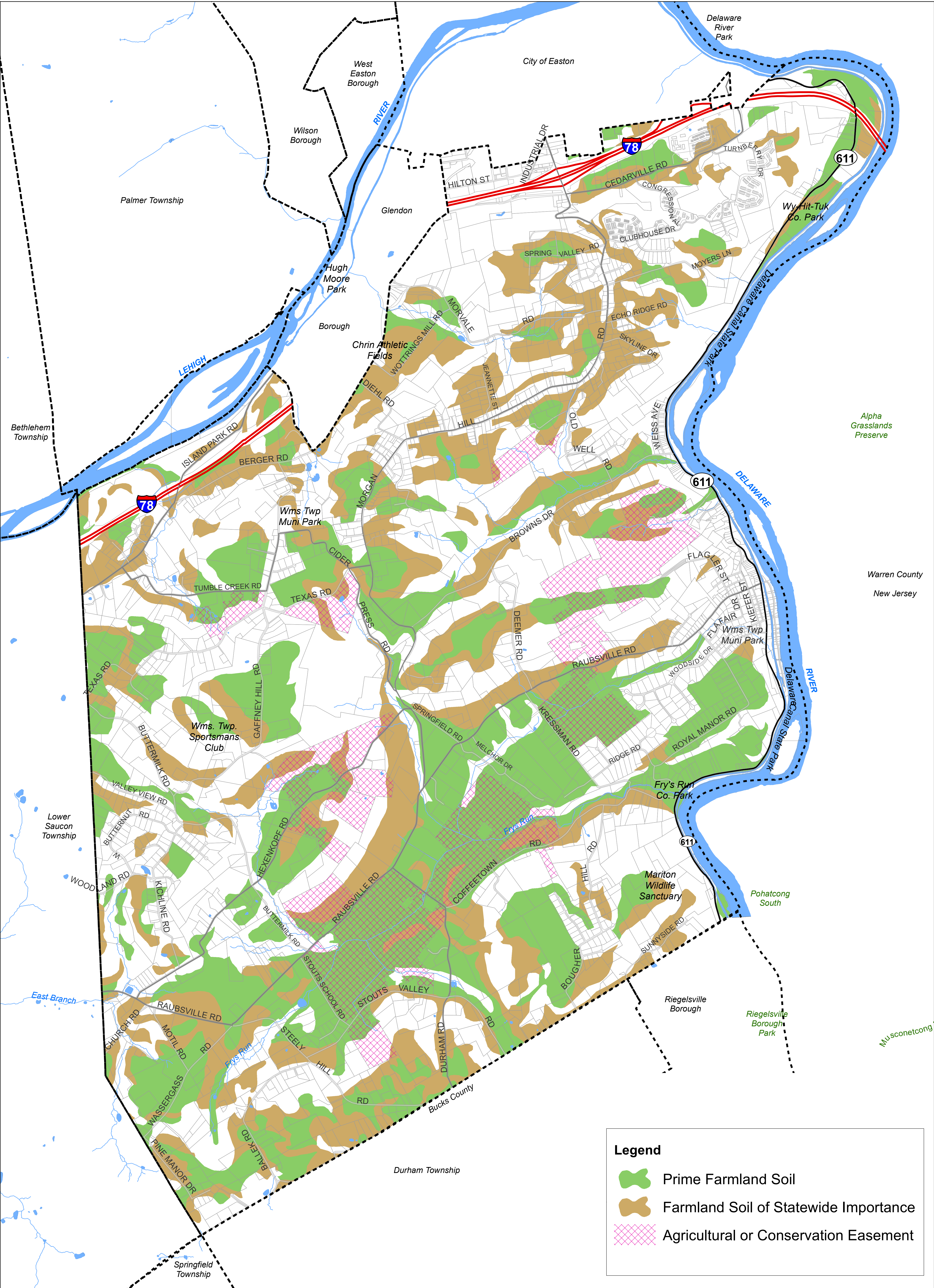
PA DEP, 2017; PA Fish and Boat Commission, 2016; Univ of Vermont Spatial Analysis Laboratory, 2013; Northampton County GIS, 10/2016

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*Browns Run has an "existing use;" all others have a "designated use."

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Map 5

Farmland Soil

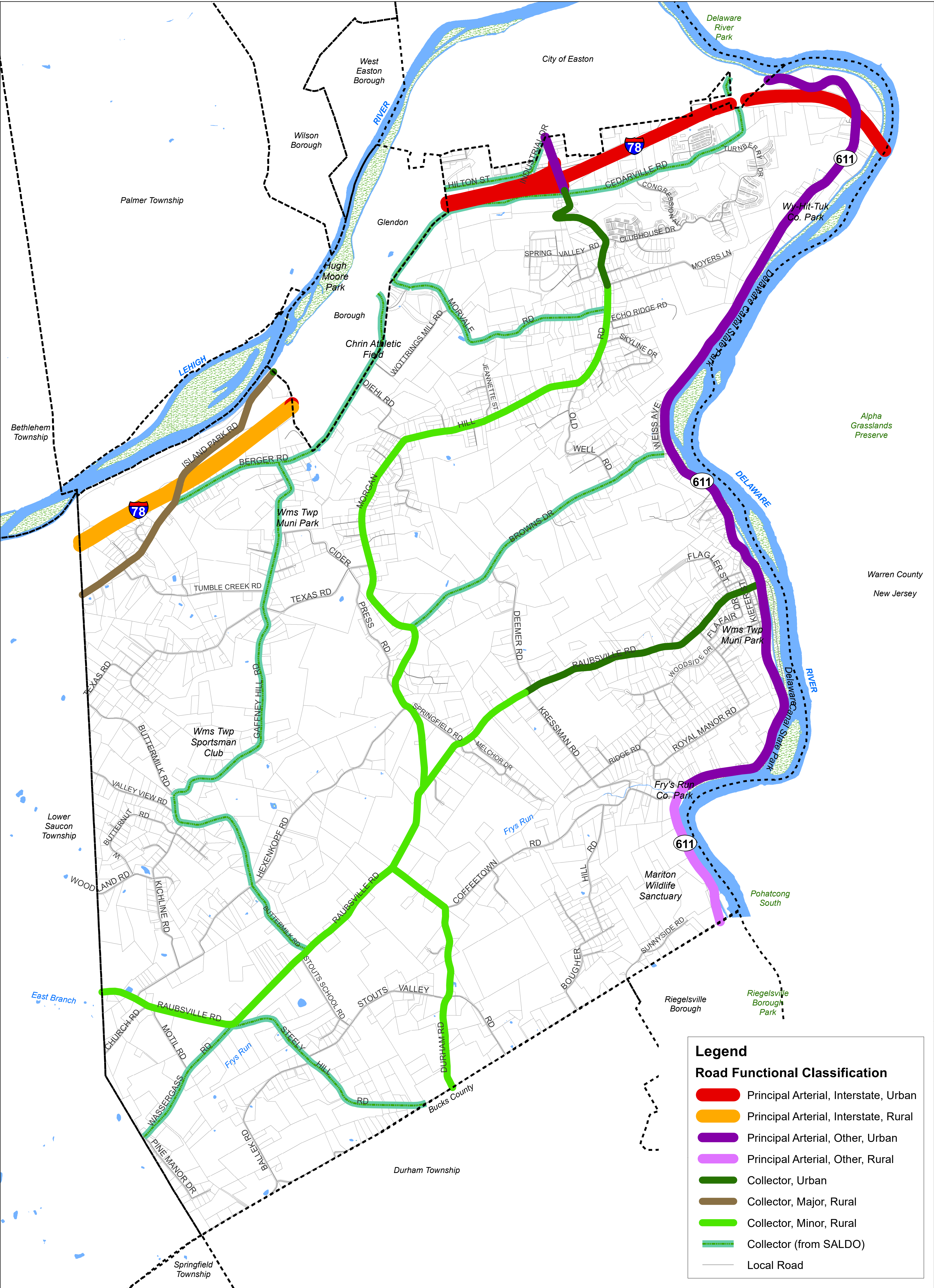
2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania



Tax parcel data provided by
Northampton County GIS, 10/2016;
Easements: LVPC, 02/2017;
Soil: USDA NRCS, 09/2014

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Map 6

Road Functional Classification

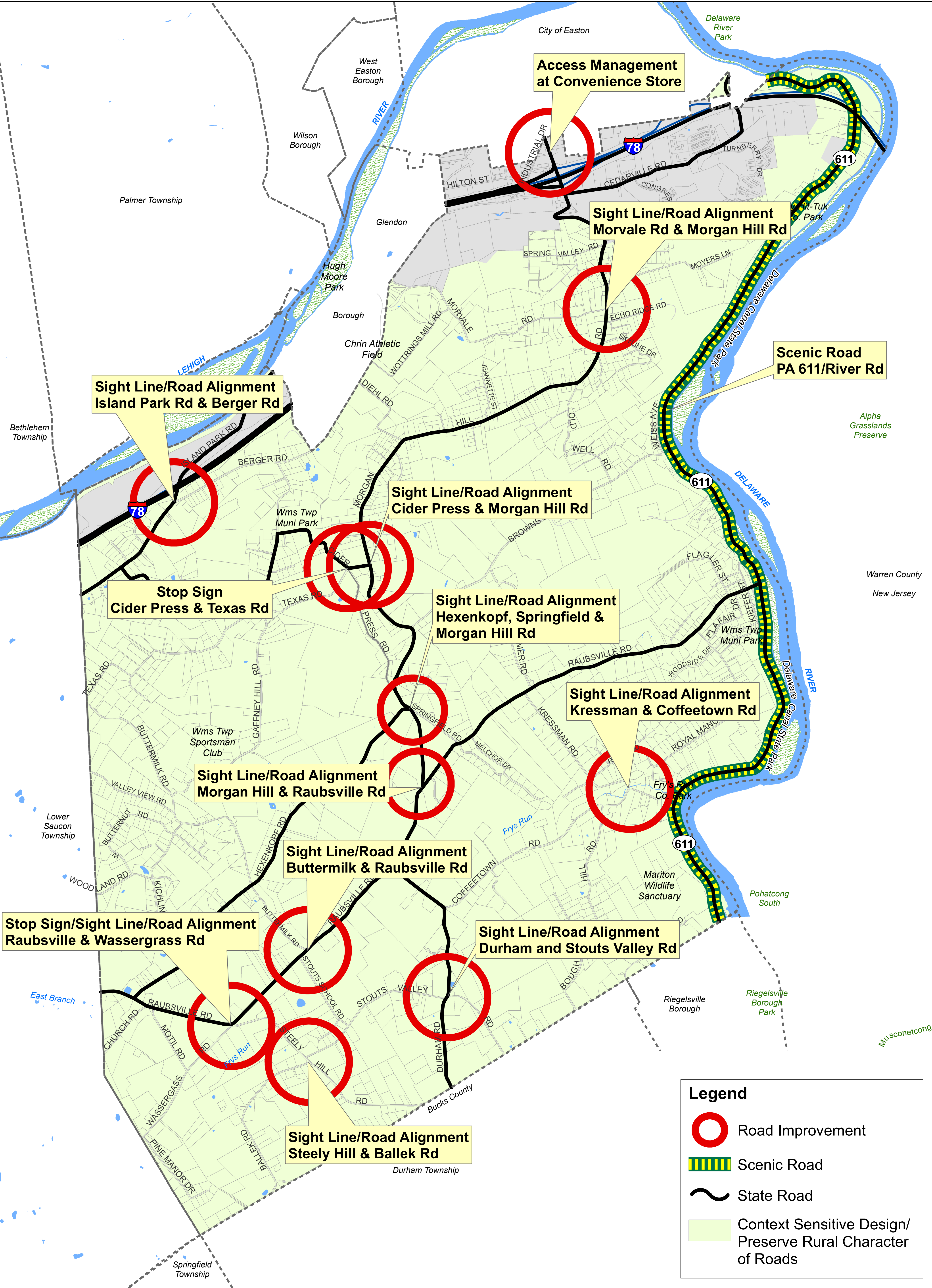
2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania



PennDOT, Jan. 2016; Williams
Twp SALDO; Tax parcel data
provided by Northampton
County GIS, 10/2016

Map prepared by:
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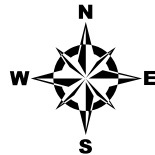
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Map 7

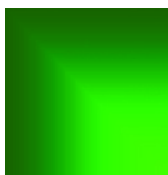
Circulation Plan: Road Improvements

2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania



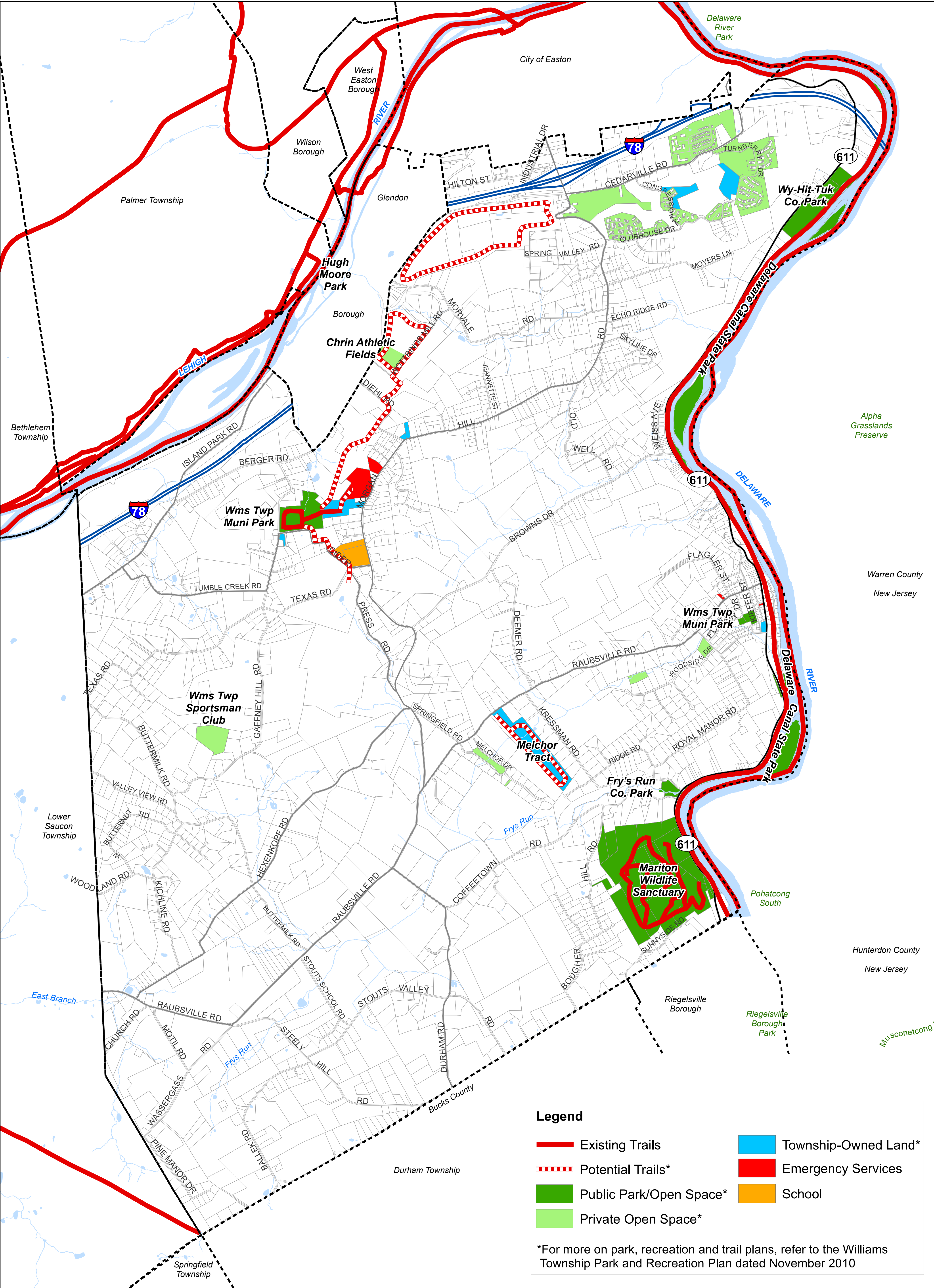
Tax parcel data
provided by Northampton
County GIS, 10/2016

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Map 8

Community Facilities Plan

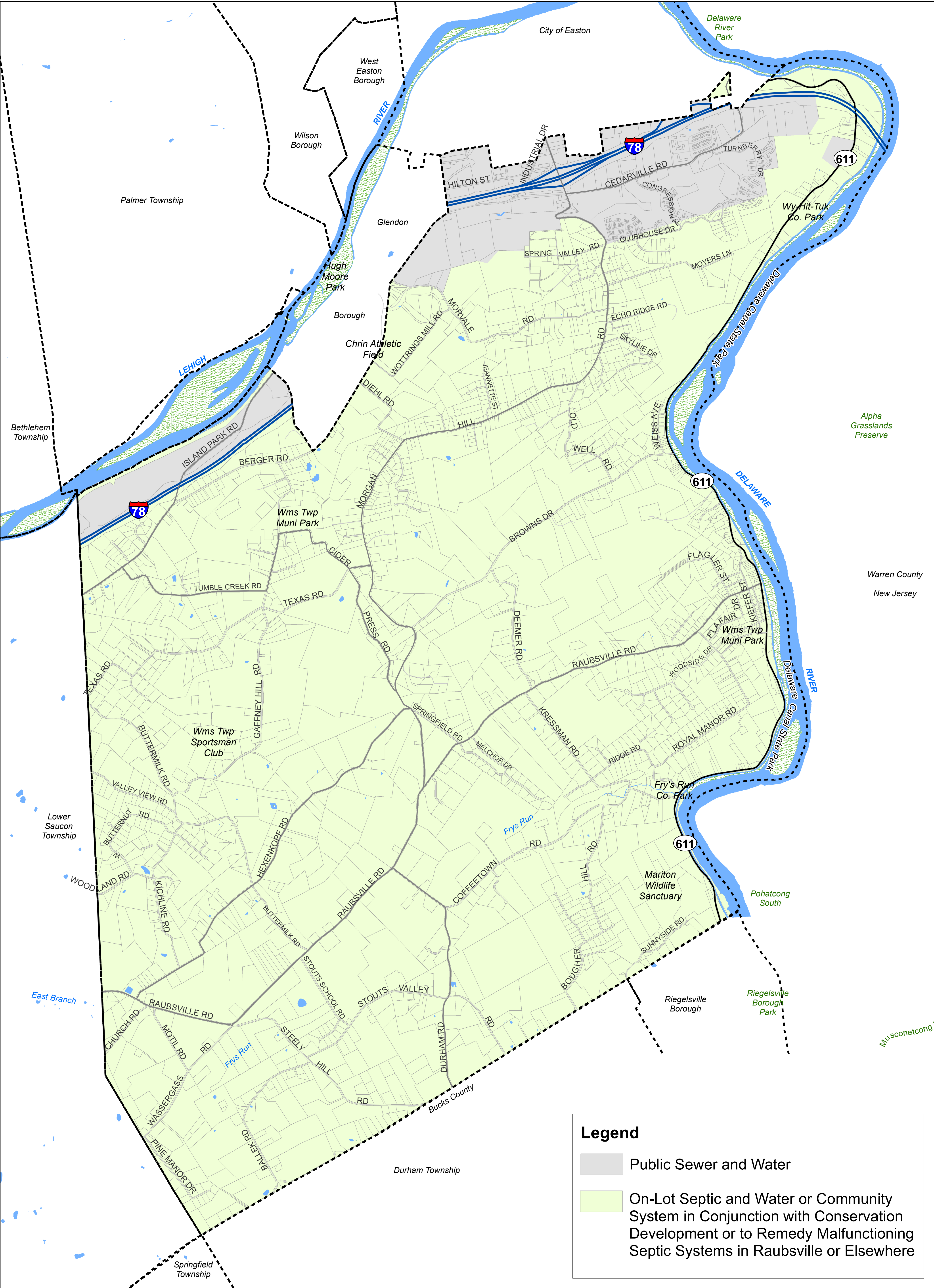
2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania



Tax parcel data provided by
Northampton County GIS, 10/2016

Map prepared by:
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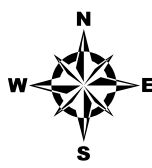
Disclaimer: This map is intended to be used for reference and illustrative purposes only. This map is not a legally recorded plan, survey, official tax map or engineering schematic and it is not intended to be used as such. Sarcinello Planning & GIS Services makes no representation as to the accuracy of lines, points, or other features shown on this map, and assumes no liability for use of this map.



Map 9

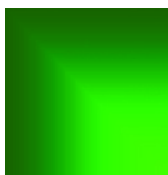
Utilities Plan: Sewer and Water

2018 Williams Township Comprehensive Plan
Williams Township, Northampton County, Pennsylvania



Tax parcel data
provided by Northampton
County GIS, 10/2016

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