

Plumstead Township

August 2011

2011 **Comprehensive Plan Update**



Plumstead Township Comprehensive Plan Update

Adopted by the
Plumstead Township Board of Supervisors
August 16, 2011

Township of Plumstead

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Plumstead Township

Comprehensive Plan Update

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August 2011



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RESOLUTION NO. 2011-19

A RESOLUTION OF THE BOARD OF SUPERVISORS OF PLUMSTEAD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, ADOPTING THE REVISED TOWNSHIP COMPREHENSIVE PLAN.

WHEREAS, the Pennsylvania Municipalities Planning Code requires that a Municipal Comprehensive Plan shall be reviewed at least every ten (10) years; and

WHEREAS, Plumstead Township last adopted a comprehensive plan in 1992; and

WHEREAS, Bucks County Planning Commission under contract with the Township has prepared a revision to the Township's Comprehensive Plan; and

WHEREAS, the revised Comprehensive Plan has been reviewed by the Township Planning Commission and the Bucks County Planning Commission and both bodies recommend its adoption; and

WHEREAS, the Comprehensive Plan has been forwarded to the adjoining municipalities as well as the Central Bucks School District, New Hope-Solebury School District, Palisades School District and Pennridge School District for their review and comments; and

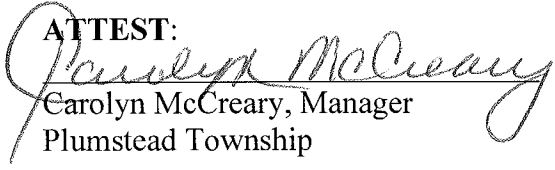
WHEREAS, pursuant to the MPC, the Board of Supervisors of Plumstead Township have held a hearing on the below listed date to consider the adoption of this Comprehensive Plan; and

WHEREAS, the general public has set forth their comments concerning the Comprehensive Plan at the Board's hearing as well as other public meetings before Township bodies.

NOW THEREFORE IT IS HEREBY RESOLVED, by the Board of Supervisors of Plumstead Township that the revised Township Comprehensive Plan is hereby adopted in full including all of the maps and charts set forth therein and all of the appendices attached thereto.

SO RESOLVED THIS 16th day of August, A.D., 2011.

ATTEST:


Carolyn McCreary, Manager
Plumstead Township

**PLUMSTEAD TOWNSHIP
BOARD OF SUPERVISORS**


Frank Froio


Stacey Mulholland


Thomas Alvare


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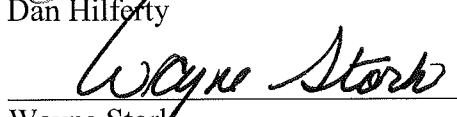

Wayne Stork

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Executive Summary

Plumstead Township has been guiding its future development through proactive planning and land use controls for more than 40 years. The first comprehensive plan was adopted in 1969, followed by the adoption of a zoning ordinance. The comprehensive plan was updated again in 1992. The *Plumstead Comprehensive Plan Update* will take into account new developments and activities in Plumstead since the last update. The township has prepared a series of planning documents that have provided a foundation for formulating planning policies and recommendations. For instance, the findings and recommended actions of various documents including: *Plumstead Township Greenway and Trail Linkage Feasibility Study* (2001); *Plumstead Township Environmental Resource Inventory* (2006); *Plumstead Township Comprehensive Historic Resource Plan* (2006); and *Plumstead Township Open Space Plan* (2010) have been incorporated into this Plan.

During the last two decades, Plumstead has experienced significant population and housing growth. The majority of this growth occurred between 1990 and 2000 (over 78 percent increase). The following decade of 2000 to 2010 resulted in modest population and housing growth (approximately 9 percent), due to the effects of the economic recession. Since 2000, the majority of residential and nonresidential development that has occurred was located within the Plumstead's Development Area (the portion of the township containing sanitary sewer area and intended to serve the bulk of future development). This is a testament to the groundwork that has been laid by township officials for minimizing sprawl and concentrating growth in the area where it is most economically serviceable.

Plumstead's Land Preservation Program is a model in the County for its effectiveness in open space and agricultural preservation. The township alone has preserved nearly 1,700 acres (10 percent of the township's land area) of open space and farmland that through placement of conservation easements or through dedicated in fee-simple ownership. When taking into account all land preserved by the township, county programs, and other conservation organizations, the total swells to over 3,100 acres or 18 percent. Since its inception in 1997, Plumstead Township's Land Preservation Program has had three overriding goals: preserving farmland (and open space), acquiring park and recreation land, and protecting natural areas throughout the township. The township's voters have expressed their overwhelming support for the preservation program and its goals by approving three separate municipal open space bond initiatives totaling \$18 million, plus another \$4.5 million bond for parkland acquisition. A substantial portion of future preservation efforts will be accomplished using this funding stream. However, the township can continue to supplement these efforts with monies from the county program and other sources. The township will continue its proactive planning for the preservation of open space and agricultural lands,

protection of its natural resources, and provision of park and recreational facilities to satisfy resident needs.

The *Plumstead Township Comprehensive Plan Update* examines the inherent fabric of the township including its unique characteristics, sensitive resources, and public amenities that makes the township a special place to live and work. This Plan provides goals, principles, and recommendations for satisfying the challenges of managing growth through the next decade while enhancing the quality of life for its residents. Public participation and input—in the form of public meetings and a resident survey—has played a pivotal role in the planning process and has been incorporated into this Plan. (See Appendix A for Brainstorming Session and Appendix B for Resident Survey Results).

This Plan is organized into the following chapters: Goals and Guiding Principles; Regional Location and History; Development Today and Projected Changes; Transportation; Natural Environment and Natural Systems; Open Space and Recreational Resources; Historic and Scenic Resources; Village Planning; Community Facilities; Future Land Use Plan; Planning and Zoning in Surrounding Municipalities; and Plan Recommendations and Implementation. The Plan addresses each of the comprehensive plan elements required by the Pennsylvania Municipalities Planning Code (MPC), including the requirement to provide for the use of land within the municipality for residential housing of various dwelling types encompassing all basic forms of housing. An analysis of the Development Area proves that Plumstead satisfy its fair share housing obligations through 2021. The Plan examines current nonresidential development trends and concludes adequate areas exist for future infill development and redevelopment opportunities. Recommendations are provided that are intended to enhance the safety and attractiveness of these areas.

The Future Land Use Plan chapter is the central element of this comprehensive plan and encompasses the eight guiding principles that were established in the planning process. An overarching principle of this Plan is to promote Smart Growth and Sustainability for future development. The Future Land Use Plan designates various planning areas and specialized areas, identifies the intent of these areas and provides recommendations intended to guide future development and activities.

Goals and Guiding Principles

COMMUNITY GOALS

What does the future hold for the township? What should it look like and how do we make it happen? What kind of legacy do we want to leave for future generations? These are the questions facing Plumstead Township as we take aim at addressing the future.

The overall goal for Plumstead Township is to protect and enhance the quality of life for residents to live, work, and raise a family. The quality of life encompasses all aspects of the community—a broad spectrum including the physical environment, fiscal health, and efficiency of local government services. The realization of this goal cannot be achieved without some challenges, difficult choices, community participation, and strong public leadership.

GUIDING PRINCIPLES

Eight principles will be used to guide the future actions and decisions of the township so that community changes will protect the natural environment, respect existing neighborhoods, protect the agricultural economy, reflect the opinions and preferences of the residents, and enhance the living and working environments that provide services and facilities needed for healthy neighborhoods. The following principles were developed, in part, through the review of the resident survey, examining current conditions and trends, learning from the experiences of other communities, and setting standards of what our community should be in the future.

Principle 1 *Enhance the Image and Sense of Community*

Vibrant communities are attractive, walkable, affordable, and sustainable and meet the housing needs and preferences of residents. Plumstead has a distinguished history and character that defines the community's identity. By identifying what makes Plumstead unique, the township can develop standards that foster attractiveness with economic vitality and strong sense of place. Plumstead will do its best to ensure that new construction respects the community's local character. Thriving town centers are a vital component of the fabric of a community since they serve as places where people gather for entertainment and interaction.

Principle 2 *Protect Natural Resources*

Development will be accommodated in a way that protects the land, air, and water for present and future generations. A policy to protect the natural features of the township, including the drainage areas of creeks and their tributaries, floodplains, wetlands, woodlands, steep slopes, farmland resources, and other sensitive environmental areas will continue. Appropriate updates to this policy to address flooding problems, site disturbance, water quality degradation, loss of tree cover, and energy conservation will be monitored and put into practice.

Principle 3 *Preserve Open Space and Protect Agriculture*

Farming and open space resources remain an important part of the landscape in Plumstead, but the pressures from development threatens to fragment these resources. The diversification of agricultural businesses, including the development of vegetable and specialty crops, organically-grown produce, and pick-your-own operations, have helped expand and strengthen the agricultural industry. The protection of meaningful open space should be addressed as part of the development process and conservation easement acquisition is encouraged.

Principle 4 *Protect Historic and Scenic Resources*

Ensure the preservation of the township's historic and scenic resources by requiring future growth to recognize, protect, and incorporate these landscapes, buildings, and structures. Traditional landscapes, villages, and historic structures help define Plumstead's character and conservation will ensure they will be available for present and future generations.

Principle 5 *Build and Maintain Livable Communities*

Adequate community facilities and services such as emergency services, school facilities, safe and efficient water and sewer facilities, and parks and recreational facilities are an important community asset and should be provided to satisfy the needs of its residents.

Principle 6 *Improve Mobility*

Improving mobility means providing more transportation choices, designing functional transportation facilities that complement the existing traditional rural residential character of the township. Plumstead will expand and promote its greenway and trail network for use by pedestrians, bicyclist, and equestrians.

Principle 7 *Ensure Economic Vitality of the Community*

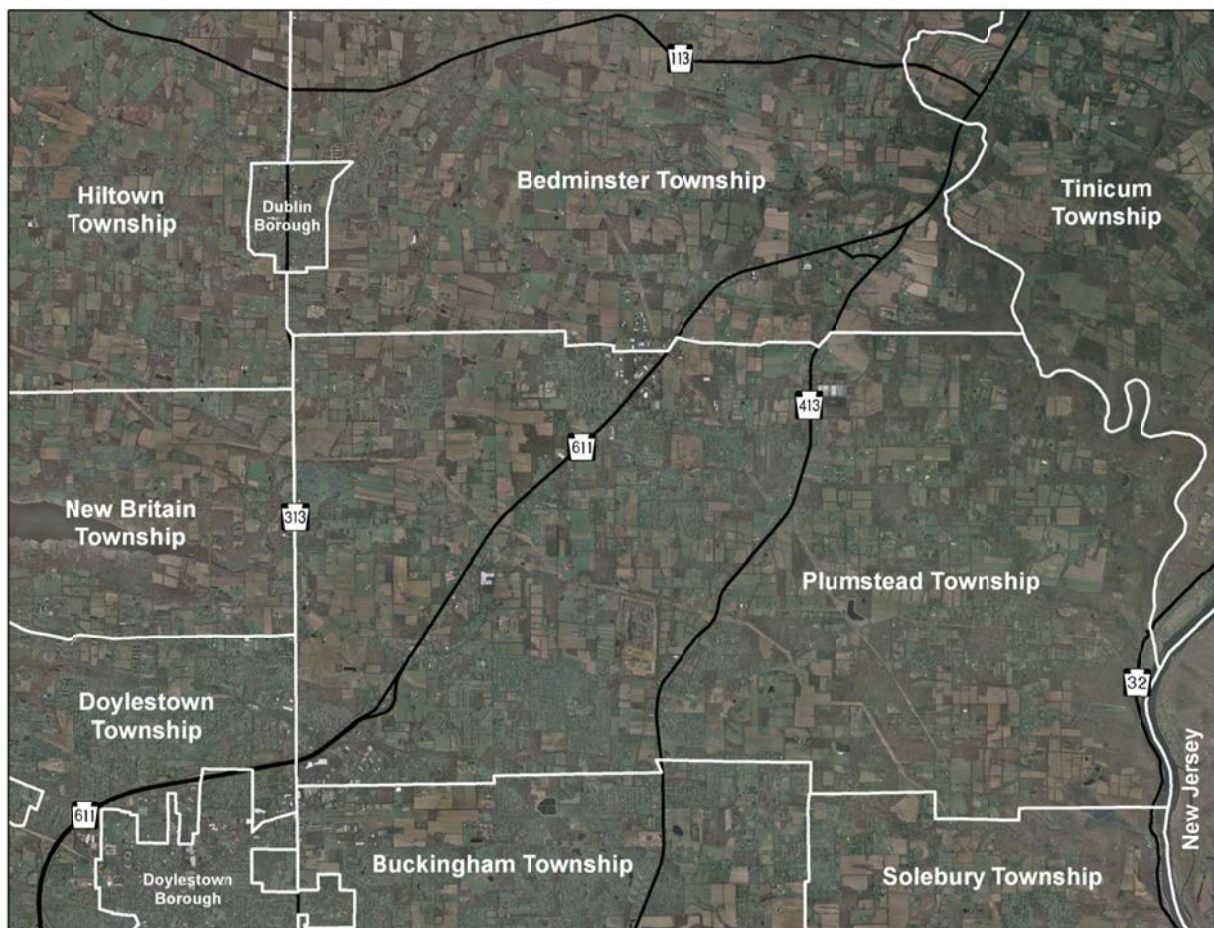
To maintain and enhance Plumstead's economic base, there should be recognition that the businesses and industries that provide jobs and tax revenues to support public services and the quality of community life. Judicious land use planning directs nonresidential development to appropriate areas within the township's transportation network resulting in minimal impacts to surrounding residential uses.

Principle 8 *Promote Smart Growth and Sustainability*

Guide new growth into development areas and guide the form of new development to create a pleasant living environment that is respectful of the natural environment, neighbors, and to the community as a whole. Accommodating anticipated growth in defined development areas will minimize public expenditures and safeguard public health while meeting the township's obligation to provide for new residences in a variety of housing choices.

Regional Location

Located in central Bucks County, Plumstead Township encompasses approximately 28 square miles (17,387 acres). As shown below, Plumstead is bordered by seven municipalities in Bucks County and two municipalities across the Delaware River in New Jersey. Overall, much of the area adjoining Plumstead is generally rural in nature. In 2010, nearly 60 percent of this region consisted of agricultural, vacant, and large residential parcels. Concentrations of residential and nonresidential uses are located primarily along area arterials and collector roads and the development of Buckingham Township. Major arterials located within this region include Route 313, Route 611 (and a portion of the Route 611 bypass), and Route 413 that traverses Plumstead Township and Route 113 to the north traversing Bedminster and Hilltown townships.



Since 2000, development in this region was generally not as significant as the previous decade due in large part to the effects of two economic downturns in 2001 and 2006 and concomitant declines in the housing market. However, the availability of land suitable for development, good access to

the regional transportation network, and public sewer or other centralized sewage disposal capacity makes the region attractive for additional residential and nonresidential growth in the future.

EARLY HISTORY OF THE TOWNSHIP

Early settlers described Plumstead as “a region of valley, plain and winding creek.” These earliest settlers were Quakers who resided in the lower and middle sections of the township. Upper sections were settled later by Germans and the Scotch-Irish Presbyterians.

The name Plumstead is said to derive from Francis Plumstead, a London merchant who was given 2,500 acres of land by William Penn, but who himself never came to America. The name may originally have come from one of the four Plumstead parishes in England.

There was an effort to organize the township in 1715 when a petition was filed in Bucks County Court of Quarter Sessions to establish a township encompassing some 14,000 acres. The petition failed for lack of population in the territory.

Between 1715 and 1725, when the court did approve the establishment of the township, some significant changes occurred, which brought more residents to the territory. John Dyer, an early settler, established the first mill in the township, on the Pine Run, in 1718. Dyer was also instrumental in having the Easton Road (now Old Easton Road) extended from Horsham in Montgomery County to the village of Dyerstown in Plumstead. Like township formation, road extensions had to be approved by the Bucks County Courts, and the Easton Road extension was approved in 1723.

During the late 1700s, Dyerstown, named after John Dyer, had a population equal to that of Doylestown, which in those days was relatively small due to a lack of industry. After the county seat was moved to Doylestown, in 1813, it quickly grew and surpassed Dyerstown in size.

Farming in the township was not especially productive. In particular, the farms in the northern and northeastern sections were poor. Looking at soil and topography maps today, it is evident that other portions of Bucks County, to the north and south, were blessed with more fertile soils and better farming conditions than was Plumstead.

The township has several historic villages that developed as commercial centers in otherwise agriculturally oriented communities. These villages established by the first settlers remain today: Dyerstown, Gardenville (originally Brownsville), Danborough (now Danboro), Plumsteadville, and Point Pleasant.

Of all the villages, Plumsteadville was the most flourishing, with a large number of houses, stores, taverns, and a carriage factory employing dozens of people. It was first known as Hart’s Tavern, after the tavern built around 1751 by James Hart, who owned 400 acres of land in the area.

Gardenville was the headquarters for the Persistent Horse Company, one of several organizations of local citizens who banded together “for the detection of horse thieves and other villains.” While most municipalities had their own horse companies, the Persistent Horse Company was among the earliest and certainly the largest in the county. In the mid-1800s, it was split into two sections—one covering east of the Durham Road and one covering west of the road—in order to track criminals more effectively.

Plumstead continued to develop from the mid 1800s to and early 1900s along heavily traveled roads and adjacent to village centers such as Danboro and Point Pleasant. Additional development took place in the Cross Keys and Plumsteadville areas including commercial, residential, and a few manufacturing uses extending northward from Doylestown Borough along East Road (Route 611).



Chapter 1

Development Today and Projected Changes

POPULATION CHARACTERISTICS AND TRENDS¹

Plumstead, in less than a century, has more than quintupled in population, in the process transforming from a farming village to a community of mixed rural and suburban flavor. Table 1 documents this growth.

Table 1
Plumstead Township Population, 1950–2010

Year	Population	Percent Change
1950	2,353	—
1960	3,354	42.5%
1970	4,682	39.6%
1980	5,153	10.1%
1990	6,289	22.0%
2000	11,409	81.4%
2010	12,442	9.0%
Change, 1950–2010		428.7%

Source: U.S. Census

Since 1990, Plumstead has experienced significant population growth peaking between 1990 and 2000 with an increase of more than 81 percent. Plumstead's growth rate was the second-highest in the county, behind only the 105.2 percent rate registered in Warwick Township, to the southwest. To a large extent, this growth can be attributed to several settlements of zoning challenges that were constructed during this time period.

¹ The demographic and socioeconomic data used in this chapter comes from the most current data available at the time of this plan production. Thus data comes from various sources such as: 1990, 2000, 2010 U.S. Census Bureau, and U.S. Census Bureau 2005-2009 American Community Survey 5-year Estimates, which is a calculated average during this 60-month period.

Table 2 shows regional change in population. From 1990 to 2000, the region formed by Plumstead and its eight adjoining municipalities grew by 20,064 people or about 27 percent in population and 8,044 or over 29 percent in housing units. In the region as a whole, population and housing increased at a pace roughly in tandem.

*Table 2
Population, Plumstead and Surrounding Municipalities, 1990–2010*

Municipality	Population			1990–2000 Change		2000–2010 Change	
	1990	2000	2010	Number	Percent	Number	Percent
Plumstead Township	6,289	11,409	12,442	5,120	81.4%	1,033	9.1%
Bedminster Township	4,602	4,804	6,574	202	4.4%	1,770	36.8%
Buckingham Township	9,364	16,442	20,075	7,078	75.6%	3,633	22.1%
Doylestown Borough	8,575	8,227	8,380	-348	-4.1%	153	1.9%
Doylestown Township	14,510	17,619	17,565	3,109	21.4%	-54	-0.3%
Hilltown Township	10,582	12,102	15,029	1,520	14.4%	2,927	24.2%
New Britain Township	9,099	10,698	11,070	1,599	17.6%	372	3.5%
Solebury Township	5,998	7,743	8,692	1,745	29.1%	949	12.3%
Tinicum Township	4,167	4,206	3,995	39	0.9%	-211	-5.0%
TOTAL	73,186	93,250	103,822	20,064	27.4%	10,572	11.3%

Source: U.S. Census

*Table 3
Housing, Plumstead and Surrounding Municipalities, 1990–2010*

Municipality	Housing Units			1990–2000 Change		2000–2010 Change	
	1990	2000	2010	Number	Percent	Number	Percent
Plumstead Township	2,295	4,103	4,465	1,808	78.8%	362	8.8%
Bedminster Township	1,733	1,868	2,561	135	7.8%	693	37.1%
Buckingham Township	3,283	5,861	7,433	2,578	78.5%	1,572	26.8%
Doylestown Borough	4,100	4,055	4,129	-45	-1.1%	74	1.8%
Doylestown Township	4,857	6,200	6,636	1,343	27.7%	436	7.0%
Hilltown Township	3,659	4,370	5,574	711	19.4%	1,204	27.6%
New Britain Township	3,284	3,969	4,266	685	20.9%	297	7.5%
Solebury Township	2,503	3,207	3,747	704	28.1%	540	16.8%
Tinicum Township	1,709	1,834	1,907	125	7.3%	73	4.0%
TOTAL	27,423	35,467	40,718	8,044	29.3%	5,251	14.8%

Source: U.S. Census

The municipalities experiencing the greatest growth during this period were Plumstead (81.4 percent) and Buckingham (75.6 percent) townships. Those with a lesser, but still substantial, growth rate were Doylestown, Hilltown, New Britain, and Solebury townships. Bedminster and Tinicum townships experienced relatively minor growth. Only Doylestown Borough registered declines, losing 45 housing units and 348 persons, which is not atypical for an older, fully developed borough.

In the next decade between 2000 and 2010, the region gained a more modest 10,572 people, largely influenced by the economic recession. Plumstead growth resulted in 1,033 additional residents or an increase of over 9 percent. As shown in Table 2, Bedminster received the highest percentage increase during this decade of nearly 37 percent. Buckingham, Hilltown, and Solebury townships also received double-digit percentage gains in population growth. This population growth is primarily due to latent development that came online during this time period—not a flourishing housing market. The other municipalities had modest population growth or even slight declines.

Table 3 highlights housing unit change from the Census from 1990 to 2010 for the region. Between 1990 and 2000, Plumstead and Buckingham townships were the top housing unit gainers at nearly 79 percent each. With the exception of Doylestown Borough (-1.1 percent) and Bedminster Township (7.8 percent), and Tinicum Township (7.3 percent), the remaining municipalities in the region had significant housing gains of between 19 and 28 percent. In addition to the availability of land suitable for development, good access to the regional transportation network and public sewer or other centralized sewage disposal capacity appear to have had a large effect on growth and development in the region's municipalities.

In the next decade between 2000 and 2010, housing construction slowed considerably during the economic recession. Plumstead had a modest nearly 9 percent or 362 units. Bedminster Township was the top housing unit gainer in terms of percentage increasing over 37 percent (693 units) of its housing stock during this decade. Hilltown and Buckingham recorded housing unit gains of about 27 percent, or 1,572 and 1,204 additional units, respectively. The only other municipality with double digit housing gains was Solebury Township at nearly 17 percent.

In summary, the regional pattern of consistency in the rates of population and housing change masks some differences at the municipal level. Specifically, in Plumstead and several other municipalities, the percentage increase in housing units outstrips population gain, while in others, the reverse is true. The excess gain in housing units, compared to population, suggests that new housing is attracting younger families into Plumstead.

Plumstead, Buckingham, Hilltown, and Doylestown townships all have convenient access to major arterials (Routes 611, 313, or 113) and contain some measure of centralized sewerage that contributed to their higher levels of population and housing growth over between 1990 and 2010.

POPULATION CHARACTERISTICS

As shown in Table 4, demographics at the township level paint the picture of a white-collar, suburbanizing and family-oriented community.

Table 4
Plumstead Township Population Characteristics, 2000-2010

Characteristic	2000	2010
Median age (years)	34.4	39.6
Households ¹	3,938	4,290
Family households ²	3,129	3,354
Married-couple families	2,749	2,821
Nonfamily households ³	809	936
Householders living alone	613	715
Average household size (persons)	2.89	2.90
Average family size (persons)	3.26	3.29

Source: U.S. Census

¹ A household is an occupied housing unit.

² A family household is a household with two or more individuals related by marriage, birth, or adoption.

³ A nonfamily household is a household with a group of unrelated individuals or persons living alone.

Along with the overall growth in population between 2000 and 2010, the number of family households and nonfamily households also saw a slight gain. Of the 3,354 family households in Plumstead in 2010, 2,821 or over 84 percent were traditional married-couple families, a share that is slightly less than the 2000 figure (89 percent). The 75/25 ratio of family to nonfamily households remained relatively constant over the decade, as well.

According to the 2010 U.S. Census, Plumstead residents had a median age of 39.6 years, which was greater than the 2000 figure for the township (34.4), and below the countywide median of 42.0.

Between 2000 and 2010, average household size and average family size increased slightly from 2.89 to 2.90 and 3.26 to 3.29 persons, respectively. In contrast, average household and family size have been declining nationally and regionally because of factors that include later marriage and childbearing, higher divorce rates, and longer life spans. Plumstead's household/family size figures are slightly higher than the county's figure, which may be the result of an increase in families with children that moved into the large pool of residential units that came on line this period.

As shown in Table 5, the median household income in Plumstead compares favorably to Bucks County but the township is slightly below the average income of surrounding municipalities (\$93,611).

Table 5
*Median Household Income in Plumstead Township, Adjacent
Municipalities, and Bucks County, 2009*

Municipality	Median Household Income
Plumstead Township	\$90,811
Bedminster Township	\$85,750
Buckingham Township	\$113,582
Doylestown Borough	\$90,417
Doylestown Township	\$99,052
Hilltown Township	\$84,066
New Britain Township	\$92,242
Solebury Township	\$118,162
Tinicum Township	\$68,417
Bucks County	\$74,111

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

The township's median household income of \$90,811 was more than \$16,700 greater than that of the county. The income of the region as a whole, with the exception of Tinicum Township, was also significantly higher than that of the county.

The educational attainment of township residents also exceeds the countywide average as outlined in Table 6.

Table 6
Educational Attainment, 2009

Population 25 Years and Older				
Educational Attainment	Plumstead Township		Bucks County	
	Number	Percent	Number	Percent
Less than 9 th grade	221	2.9%	11,058	2.6%
9 th to 12 th grade, no diploma	467	6.2%	26,003	6.1%
High School graduate	1,780	23.5%	135,552	31.9%
Some college, no degree	1,120	14.8%	75,774	17.9%
Associate Degree	543	7.2%	31,475	7.4%
Bachelor's degree	2,035	26.8%	88,957	21.0%
Graduate or professional degree	1,423	18.8%	55,622	13.1%
Percent High School graduate or higher	90.9%	—	91.3%	—
Percent bachelor's degree	45.6%	—	34.1%	—

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

About 91 percent of Plumstead's adult population is a high school graduate or possesses a higher degree, which is a similar percentage to the county as a whole. Nearly 27 percent of township residents held a bachelor's degree compared to 21 percent of Bucks County residents. The number of Plumstead residents with a graduate or professional degree was nearly 6 percent higher than residents countywide.

Plumstead experienced significant residential development during the previous decade (1990-2000), along with mushrooming population growth of 81.4 percent. Much of that population growth appears to have been driven by families in the prime child-rearing years, as the number of younger adults and elementary-school age children increased markedly, while the share of elderly population diminished, in contrast to countywide trends.

From 2000 to 2010, population growth in Plumstead abated to just over 9 percent, still a significant rate of increase. Table 7 and Figure 1 detail population shifts in the township from 2000 to 2010.

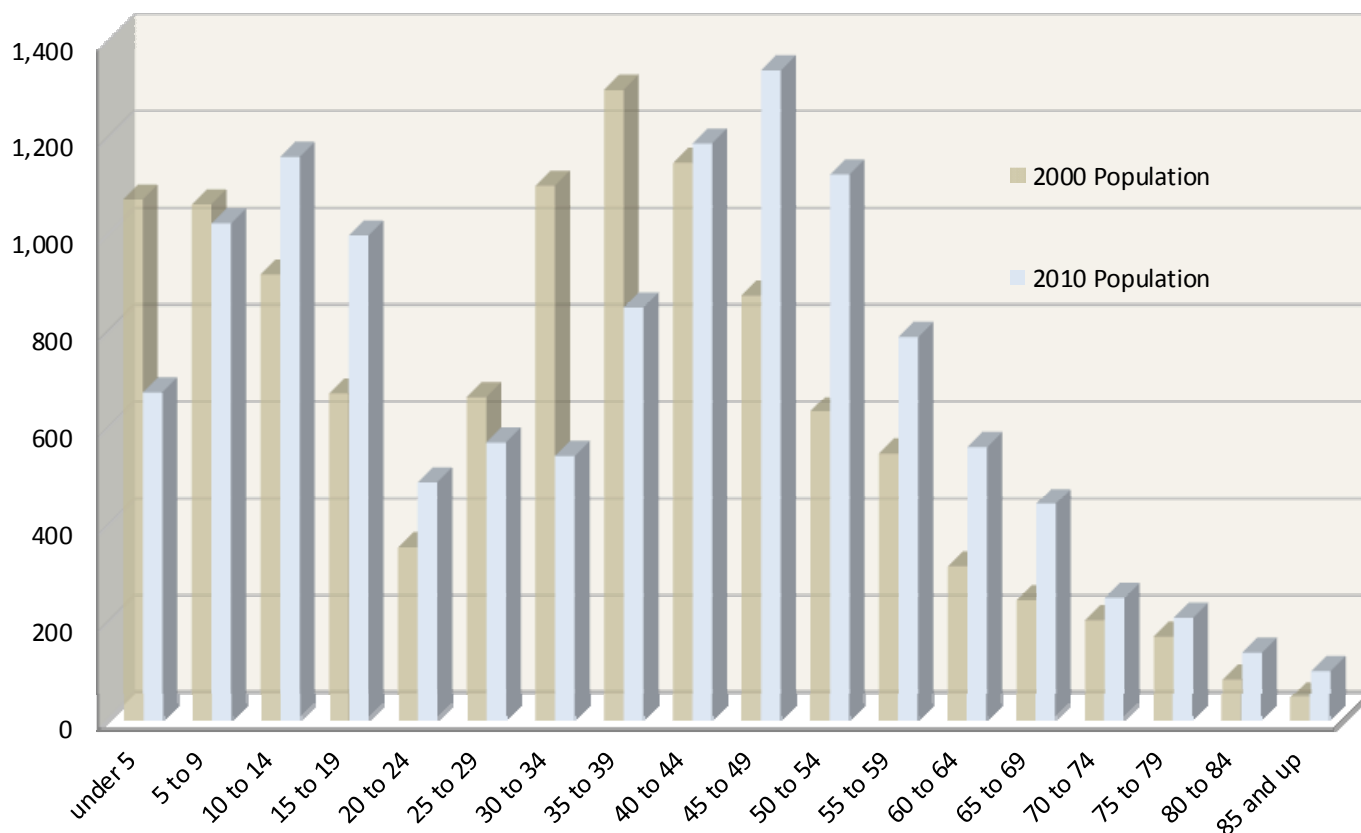
Table 7
Age Distribution, Plumstead Township and Bucks County, 2000–2010

Age Group	2000				2010			
	Plumstead Township		Bucks County		Plumstead Township		Bucks County	
	Number	Number	Number	Number	Number	Percent	Number	Percent
under 5	1,073	9.4%	38,288	6.4%	675	5.4%	34,150	5.5%
5 to 9	1,063	9.3%	43,274	7.2%	1,022	8.2%	38,919	6.2%
10 to 14	917	8.0%	45,635	7.6%	1,160	9.3%	43,070	6.9%
15 to 19	673	5.9%	39,683	6.6%	997	8.0%	41,724	6.7%
20 to 24	354	3.1%	28,321	4.7%	489	3.9%	32,984	5.3%
25 to 29	665	5.8%	32,892	5.5%	570	4.6%	33,575	5.4%
30 to 34	1,101	9.7%	42,529	7.1%	543	4.4%	32,722	5.2%
35 to 39	1,298	11.4%	53,104	8.9%	849	6.8%	37,785	6.0%
40 to 44	1,148	10.1%	54,757	9.2%	1,187	9.5%	46,174	7.4%
45 to 49	874	7.7%	48,166	8.1%	1,337	10.7%	54,629	8.7%
50 to 54	634	5.6%	41,783	7.0%	1,124	9.0%	54,461	8.7%
55 to 59	548	4.8%	31,590	5.3%	789	6.3%	46,067	7.4%
60 to 64	315	2.8%	23,519	3.9%	561	4.5%	37,770	6.0%
65 to 69	245	2.1%	20,722	3.5%	444	3.6%	27,352	4.4%
70 to 74	204	1.8%	19,261	3.2%	250	2.0%	19,907	3.2%
75 to 79	170	1.5%	15,804	2.6%	209	1.7%	16,735	2.7%
80 to 84	82	0.7%	10,084	1.7%	137	1.1%	13,838	2.2%
85 and up	45	0.4%	8,223	1.4%	99	0.8%	13,387	2.1%
TOTAL	11,409	100.0%*	597,635	100.0%*	12,442	100.0%*	625,249	100.0%*

Source: U.S. Census

*May not add up to 100 percent due to rounding.

Figure 1
Plumstead Population by Age, 2000-2010



The township's age cohort profile continues to skew younger than that of Bucks County. Median age in the township as of 2010 was 39.6 years, compared to 42 years countywide. Most gains occurred in the age cohorts comprising youths and young adults from 10 to 25, and among baby boomers—those born from 1946 through 1964.

The growth in the proportion of tweens and teenagers will affect the types of facilities and services that will be needed in the future to serve these young people and their families. The township may wish to consider providing more cultural or recreation opportunities for its youth population. Municipal officials should ensure that its zoning ordinance provides for services and facilities such as parks, sports facilities and entertainment options aimed at youths and young adults. The Central Bucks School District has already taken account of potentially burgeoning enrollments and adjusted educational services accordingly.

As the sizable baby boom generation ages, there will likely be growing demand for services geared to seniors, which may include health care, social and recreational events, transportation, or other services that help people age in place, particularly in a suburban setting like the township. Seniors may also seek out age-restricted or age-targeted housing and assisted living or other supportive housing options, which may be provided regionally, if not at the municipal level.

The township registered its most pronounced numerical losses among the age cohorts encompassing younger adults from age 25 to 39, a trend that is also evident within the county and the Commonwealth. The contraction in these age cohorts has given rise to concerns about ensuring job and housing opportunities for the upcoming generation of educated young workers.

RACIAL AND ETHNIC DIVERSITY

Plumstead Township remains a relatively homogeneous area, as is true for the region. Based upon the 2010 U.S. Census, more than 94 percent of the township population was white, which is slightly higher than the white population in the county (89 percent). The second highest percentage of individual in the township was Asian at 1.7 percent.

EMPLOYMENT AND COMMUTING

Plumstead residents are somewhat more likely to work within the state, and particularly, within the county, as compared to Bucks County residents as a whole as indicated in Table 8.

*Table 8
Place of Work for Residents of Plumstead Township and Bucks County, 2009*

Workers	Plumstead Township		Bucks County	
	Number	Percent	Number	Percent
TOTAL workers*	5,573	100.0%	311,281	100.0%
Worked in state of residence:	4,872	87.4%	265,743	85.4%
Worked in county of residence	3,234	58.0%	172,898	55.5%
Worked outside county of residence	1,638	29.4%	92,845	29.8%
Worked outside state of residence	701	12.6%	45,538	14.6%

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

Of those Plumstead residents who worked in Pennsylvania as of 2009, more than 58 percent worked in Bucks County and over 29 percent worked in another Pennsylvania county. More than 12 percent of township residents worked outside Pennsylvania.

Average commute time sheds more light on the commuting patterns of Plumstead's residents. Figures on travel time to work are in Table 9.

Table 9
Travel Time to Work for Residents of Plumstead Township and Bucks County, 2009

Travel Time	Plumstead Township		Bucks County	
	Number	Percent	Number	Percent
TOTAL	5,573		311,281	
Did not work at home	5,283	94.8%	299,344	96.2%
Less than 5 minutes	160	4.3%	7,339	2.4%
5 to 9 minutes	323	5.8%	27,125	8.7%
10 to 14 minutes	607	10.9%	42,443	14.0%
15 to 19 minutes	583	10.5%	44,490	14.4%
20 to 24 minutes	527	9.5%	38,720	12.4%
25 to 29 minutes	338	6.1%	18,067	5.8%
30 to 34 minutes	584	10.5%	34,721	11.2%
35 to 39 minutes	137	2.5%	9,881	3.2%
40 to 44 minutes	279	5.0%	13,869	4.5%
45 to 59 minutes	803	14.4%	29,307	9.4%
60 to 89 minutes	761	13.7%	24,190	7.8%
90 or more minutes	181	3.2%	8,762	2.8%
Worked at home	290	5.2%	11,937	3.8%

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

The percentage of Plumstead residents (21 percent) that spend 14 minutes or less on the road to work is slightly lower than the County (25 percent) as a whole. However, the difference between times spent on the road between 15 to 44 minutes is more significant—over half of all Bucks County residents (51.5 percent) spend between 15 and 44 minutes on the road to work, whereas only 44 percent of Plumstead residents spend this amount of time on the road to work. But 20 percent of Bucks County residents have a commute of 45 minutes or more, whereas over 31 percent of Plumstead residents have a commute of this length of time. This fact is tempered by the percentage of Plumstead residents working from home (5.2 percent), which is greater than the percentage of Bucks County residents working from home (3.8 percent).

These travel times may be related to the nature of the workforce in the township, as well as to the local and regional job markets. Higher income, highly educated, and white-collar workers are more likely to have a high-paying job at a major employment center or be able to telecommute by working from home. Also, communities like Plumstead, with its amenities, good public school system and quality of life may attract more residents who have a home occupation.

POPULATION AND HOUSING PROJECTIONS

A projection is a numerical estimate of future conditions that is based on existing conditions and trends. Population and housing projections are useful in helping a municipality plan for future needs such as park and recreation facilities, emergency services, and senior services.

The Delaware Valley Regional Planning Commission (DVRPC) provides estimates and forecasts of population to the year 2020. The forecasts are based on an age-cohort component model that incorporates birth rates, death rates, survival rates, and migration rates. The DVRPC estimate and forecast for Plumstead Township is as follows:

Table 10
DVRPC Population Data and Forecasts, 2010–2020

2000 Census	2010 Census	2010 DVRPC Forecast	2020 DVRPC Forecast	Number Change 2000–2020	Percent Change 2000–2020
11,409	12,442	13,045	15,068	3,659	32%

Source: U.S. Census and DVRPC, 2007

At first glance, DVRPC population forecasts seem reasonable when comparing the forecasted rate of change between 2000 and 2020 to past rates of growth in the township. Recent U.S. Census figures and associated rate of growth, however, indicate that DVRPC forecasts are excessive. DVRPC's 2010 population forecast exceeds the 2010 Census population for the township (12,442) prepared by the U.S. Census by 603 persons. The 2020 DVRPC population forecast appears to repeat the excessiveness shown in the 2010 forecast.

Given the undue magnitude of the DVRPC population forecasts, the development of a more representative set of projections is necessary to assess future population and housing demand. Table 11 provides township population projections based on recent County population growth trends, the municipal growth trends established in the DVRPC population forecasts, and an extrapolation of these trends to the year 2021.

Any forecast of future growth is tentative and subject to a set of assumptions holding true for a defined period of time and the constraints of the projection method employed. Nevertheless, the population projection in Table 11 should provide a fairly good picture of population growth to the year 2021, which is the targeted 10-year timeframe for this comprehensive plan. The assumption to maintain the recent pace of growth is more than reasonable considering the current economic recession and downturn in the housing market that is anticipated to have reverberating effects for the next five to ten years.

Table 11
Plumstead Population Projections, 2010–2021²

2010 Census	2021 Projection	Number Change 2010–2021	Percent Change 2010–2021
12,442	14,340	1,898	15.3%

Sources: U.S. Census, Delaware Valley Regional Planning Commission

HOUSING PROJECTIONS

Housing and population projections are closely linked in that a future population must have somewhere to live. Housing projections can be determined merely by dividing the forecasted population by the municipality’s average persons per dwelling unit in 2010 held constant for the year 2021. Thus, we can determine that Plumstead will project the following number of housing units to the year 2021:

Table 12
Housing Projections, 2010–2021³

2010 Census	2021 Projection	Number Change 2010–2021	Percent Change 2010–2021
4,465	5,150	685	15.3%

Source: U.S. Census

The housing projections assume that market conditions and regional demographic patterns will remain largely the same over the next 10 years. Further development area analysis in “Housing” in this chapter will determine whether the township is adequately zoned to meet this projection and provides for its legally-mandated fair share of growth.

² The 2020 population projection is based on the Plumstead Township portion of the County 2020 DVRPC population forecast applied to the County 2020 population projection, which is based on applying the 2000 to 2010 County population growth rate to the 2010 County population. The 2030 population projection is based on the Plumstead Township portion of the County 2030 DVRPC population forecast applied to the County 2030 population projection, which is based on applying the 2020 to 2030 County high growth rate forecasted by DVRPC to the 2020 County population projection.

The difference between Plumstead’s population projections for 2030 (15,890) and 2020 (14,170) is 1,720. To determine the 2021 projection, this figure (1,720) was divided by 10 and rounded down resulting in an annual population gain of 170 between these two decades. Therefore, the extrapolation of these trends results in a 2021 population projection of 14,340 or the sum of the 2020 population (14,170) and the extrapolation of one year of average annual population growth (170).

³ The difference between Plumstead’s housing projections for 2030 (5,700) and 2020 (5,090) is 610. To determine the 2021 projection, this figure (610) was divided by 10 and rounded down, resulting in an annual housing unit gain of 60 between these two decades. Therefore, the extrapolation of these trends results in a 2021 housing projection of 5,150 or the sum of the 2020 housing projection (5,090) and the extrapolation of one year of growth (60).

LAND USE CHARACTERISTIC AND DEVELOPMENT TRENDS

REGIONAL PERSPECTIVE

Overall, Plumstead and adjoining municipalities are generally rural in nature with concentrations of residential and nonresidential uses along area arterials and collector roads and within those areas served by public water and sewer service. In 2010, nearly 60 percent of the region consisted of Agricultural, Rural Residential, and Vacant land uses, which contributes to its rural nature. Single-Family Residential use comprises about 20 percent of the total land area. Nonresidential land uses (Commercial, Mining and Manufacturing, and Government and Institutional) comprised about 6 percent of the region. Doylestown Borough and areas adjacent to the borough within Plumstead, New Britain, and Buckingham townships are predominately suburban to urban in character.

Similar to other areas within the County, Plumstead and its neighbors have generally not received significant development since 2000 due in large part to the effects of the economic recession. Exceptions included Bedminster, Buckingham, Hilltown, and Solebury townships that experienced double-digit population (percentage) gains between 2000 and 2009,⁴ which are likely byproducts of latent development in the pipeline (or court ordered settlements) constructed during this time period. Nevertheless, availability of land suitable for development, good access to the regional transportation network, and public sewer or other centralized sewage disposal capacity makes the region attractive for future residential and nonresidential growth following the recovery of the current economic conditions.

TOWNSHIP PERSPECTIVE

In light of past population and housing growth cycles, Plumstead remains predominately rural in character. In 2010, about 65 percent of the land area of the township or 11,344 acres consisted of Rural Residential, Agricultural, and Vacant uses. Table 13 provides a summary of land use characteristics within the township between 1990 and 2010 and Figure 2 highlights the 2010 land use patterns.⁵

In 2010, Rural Residential use constituted the largest land area in the township with 5,246 acres or about 30 percent of the township's land area. Rural Residential land use contains a single-family detached dwelling but is located on lots that are 5 acres or greater. (For a detailed description of land use definitions, see Appendix C). The purpose of the Rural Residential category is to identify

⁴ Based upon 2009 population estimates from the U.S. Census

⁵ For 2010 land use mapping and statistics, subdivision and/or land development proposals that received a building permit at the time of plan production was considered constructed or subdivided and the parcel and its respective acreage was included in the respective land use category.

large residential lots that may have potential for future subdivision or land development, which will be examined in more detail later in the Future Land Use Plan section.

Agricultural use constitutes the second largest land area of 4,031 acres or 23 percent of the township's land area.⁶ As shown in Figure 2, the highest concentration of Agricultural land is located in the northwestern portion of the township west of Route 611.

Single-Family Residential category is the third largest land area consisting of 2,785 acres or about 16 percent of the township's land area, and consists of single-family detached dwellings on lots less than 5 acres. The highest concentration of single-family residential subdivisions are located in the township's publicly sewered areas within or adjacent to the Routes 611 and 413 corridor including Timberly Farms, Sterling Close, Windtree, Country Green, Fox Hunt, Summer Hills, Summer Meadows, Cabin Run, North Branch, and Durham Ridge.

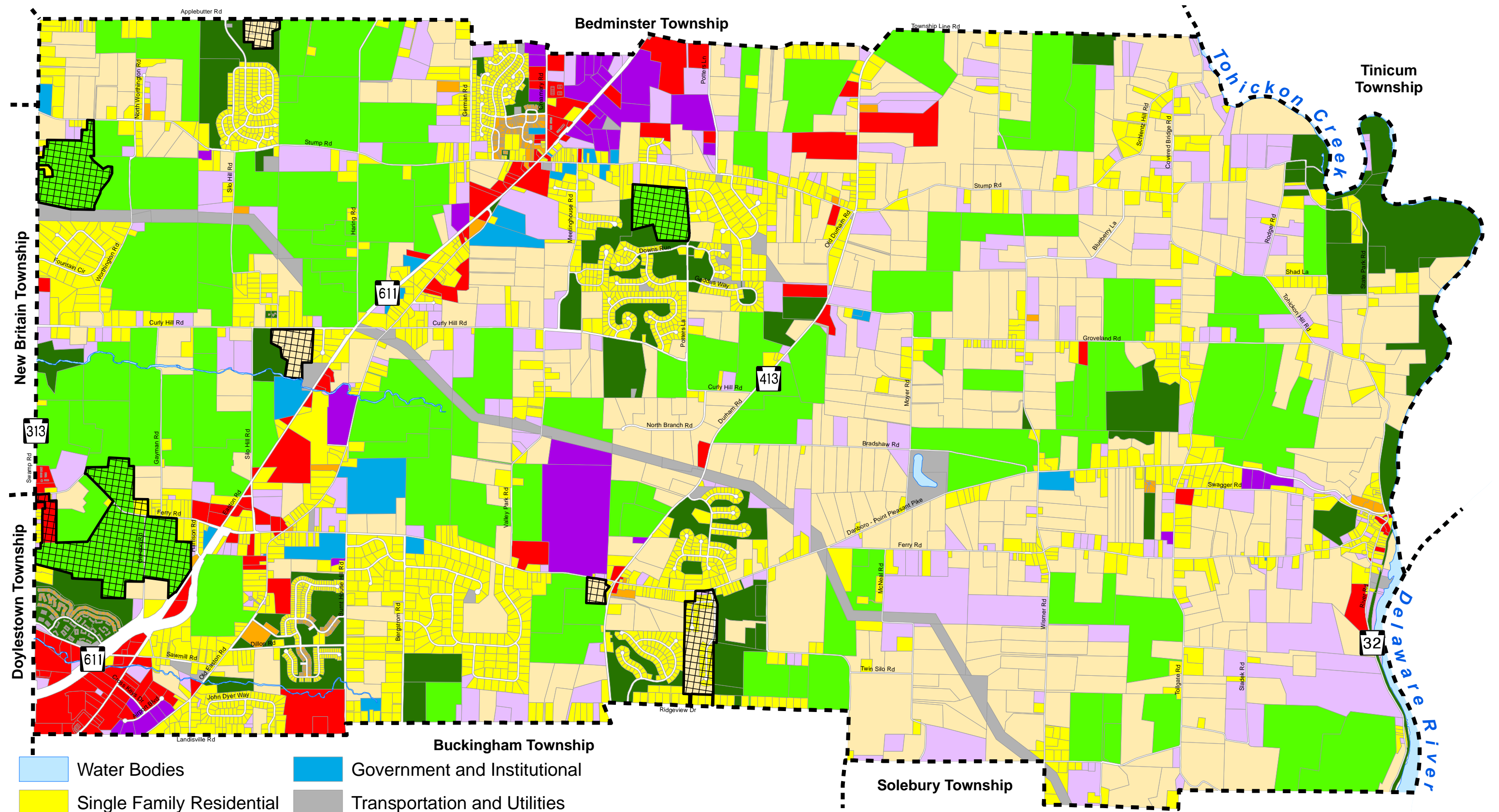
Table 13
Land Use Characteristics, 1990 and 2010



Land Use Category	1990		2010		1990–2010	
	Acreage	Percent	Acreage	Percent	Amount Change	Percent Change
Single-Family Residential	1,875	10.8	2,785	16.0	910	48.5
Rural Residential	5,303	30.5	5,246	30.2	-57	-1.1
Multifamily Residential	43	0.2	92	0.5	49	114.0
Commercial	307	1.8	595	3.4	288	93.8
Mining & Manufacturing	165	0.9	359	2.1	194	117.6
Government & Institutional	141	0.8	185	1.1	44	31.2
Transportation & Utilities	504	2.9	961	5.5	457	90.7
Agricultural	6,477	37.3	4,031	23.2	-2,446	-37.8
Park, Recreation & Protected Open Space	342	2.0	1,092	6.3	750	219.3
Vacant	2,224	12.8	1,648	9.5	-576	-25.9
Approved for Residential Development/ Open Space	n/a	n/a	393	2.3	n/a	n/a
TOTAL	17,381*	100%	17,387*	100%		

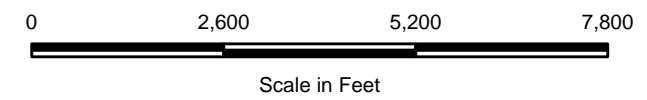
* The municipal acreage totals for 1990 and 2010 differ slightly due to a change in mapping sources and conventions. Percentage totals may not add up due to rounding.

Vacant land uses, which consist of parcels that are void of residential dwellings or nonresidential uses, are the fourth largest with 1,648 acres and 9.5 percent of the land area. Vacant land use is scattered throughout the township.

⁶ The Agricultural category is limited to parcels that are 20 acres or over in area for statistical and mapping purposes. Agricultural lands less than 20 acres are classified as either Vacant or Rural Residential uses. The exception is parcels containing a conservation easement that was purchased by or donated to the Plumstead Township as part of their Land Preservation Program. In the case of these properties, the acreage of the parcel may be less than 20 acres.



- | | | | |
|--|---------------------------|---|---|
|  | Water Bodies |  | Government and Institutional |
|  | Single Family Residential |  | Transportation and Utilities |
|  | Rural Residential |  | Agricultural |
|  | Multifamily Residential |  | Parks, Recreation and Protected Open Space |
|  | Commercial |  | Vacant |
|  | Mining and Manufacturing |  | Approved for Residential Development/Open Space |



Prepared by
Bucks County Planning Commission
Geographic Information Systems Section
2010

Source: Bucks County Board of Assessment Data (2010)



PLUMSTEAD TOWNSHIP COMPREHENSIVE PLAN

**FIGURE 2
LAND USE**

Multifamily Residential use, which consists of three or more attached units, comprises 92 acres or about 0.5 percent of the township's land area. Multifamily Residential developments are scattered throughout the township, but the highest concentration is located within the Cabin Run, Patriot's Ridge, Summer Hill, and Summer Meadows developments.

Parks, Recreation, and Protected Open Space use constitutes 1,092 acres or about 6 percent of the township's land area. This category includes parkland such as Ralph Stover State Park, Tohickon Valley County Park, and various township parks, the Ockanickon Boys Scout Reservation lands, and common open space areas associated with the various residential subdivisions.

Primarily concentrated along portions of the Route 611 and 313 corridors (and to a lesser extent along the Route 413 corridor), nonresidential land uses account for nearly 7 percent of the township's land area. Commercial uses accounted for the largest nonresidential land area (595 acres or 3.4 percent), followed by Government and Institutional (185 acres or 1.1 percent), and Mining and Manufacturing (359 acres or 2.1 percent).

Transportation and Utilities use which includes roadways and utility easements, accounts for 961 acres or approximately 5 percent of the township's land area.

The Approved for Residential Development/Open Space category consists of latent development in the pipeline that has received final plan approval. Totaling 393 acres or slightly over 2 percent of the land area, this category includes residential lots and preserved open space areas associated with the proposed development.

DEVELOPMENT TRENDS

Historically, there have been subtle shifts in land use characteristics in Plumstead Township. An examination of development trends between 1990 and 2010 are provided in Table 13. During this 20-year period, land uses that had the highest decreases in acreage were Agricultural (2,446 acres or about 38 percent decrease) and vacant (576 acres or about 26 percent decrease). This can largely be attributed to the conversion of agricultural and vacant areas to single-family and multifamily residential development and parkland/open space. Subsequently, over this same time period, land uses with the greatest acreage gains were Single-Family Residential (910 acres or over 48 percent) and Parks, Recreation, and Protected Open Space (750 acres or about 219 percent). Multifamily Residential gained 49 acres or about 114 percent. The significant increase in Parks, Recreation, and Protected Open Space land area can be attributed not only to the protected common open space associated with the dozen or more residential developments but at least four additional township parks that have been constructed since 1990. Looking into the future, single-family and multifamily residential acreage will increase as suggested by the residential subdivisions that were approved; however, the current economic downturn may curb the timing and extent of these developments.

Nonresidential development trends between 1990 and 2010 suggest that Mining and Manufacturing use increased significantly (194 acres or about 118 percent), which can be largely attributed to the creation of the quarry west of the Village of Gardenville along Danboro-Point Pleasant Pike, as well as the expansion of industrial operations in the vicinity of the Village of Plumsteadville. Commercial use also had a significant acreage gain (288 acres or nearly 94 percent) during this time period. Government and Institutional use had a more modest increase of 44 acres or about 31 percent that includes the addition of Groveland Elementary and Tohickon Middle schools.

APPROVED DEVELOPMENT PROPOSALS

As of May 2010, there were over 40 proposed development plans on file with the township, many of which have received preliminary or final plan approval. Given the current economic conditions, a significant number of these developers have, or will likely, withdraw or suspend future action on their plan submissions.

Table 14, below identifies only proposals that have received final approval from the township that are more likely to be developed in the future. There are five nonresidential development proposals totaling nearly 84,000 square feet of floor area. It should be noted that three of the five proposals are redevelopment or expansion projects. These two new proposed nonresidential developments comprise about 6 acres and would include a daycare/office building and flex office space totaling about 31,000 square feet.

The seven residential development proposals comprise about 393 acres and would total 621 units. The proposed dwelling units consist of single-family detached, townhouse, apartment, and multiplex arrangements. These sites are identified as 'Approved for Residential Development' in Figure 1, Land Use. With the current economic conditions, there is no guarantee if and when any of these proposals may be constructed. However, as a conservative approach for identifying future residential growth levels, these sites will not be considered vacant and available for future development. (See Development District Analysis for further discussion.)

Table 14
Development Proposals with Final Approval

Nonresidential Development	Proposed Use(s)	Square Footage
DiPalma Tract	Daycare/Office	15,500
Fred Beans Dodge/Chrysler & GM	Redevelopment Only	23,750
Fred Beans Suzuki	Redevelopment Only	4,200
Hanover Brands	Flex Space (Office/Warehouse)	15,959
Plumstead Christian School	School Expansion	24,542
	Total Square Footage	83,951
Residential Development	Proposed Use(s)	Number of Units
Autumn Preserve (Leatherman)	Single-Family Detached	24
Carriage Hill	Single-Family Detached, Townhouse, Multiplex, Apartments	463
Garden Village (Laquer Tract)	Single-Family Detached, Townhouse, Apartments	40
Hostvedt	Single-Family Detached	33
Lykon	Single-Family Detached	5
Owl's Nest (Worthington Tract)	Single-Family Detached	16
Plumstead Chase (McGinnis Farm)	Single-Family Detached	40
	Total Units	621

HOUSING

Ensuring a well-planned and equitable base of housing is vital to the fundamental needs of the township's residents. The Pennsylvania Municipalities Planning Code (MPC) requires all municipalities to provide for a variety of basic housing types in their zoning ordinances. Growing communities are additionally required to show that their zoning will allow a fair share of various housing types as new development occurs.

This chapter summarizes conditions, trends and market forces related to housing in Plumstead Township. It examines the supply, the quantity and nature of existing and proposed housing, and demand, as measured by market price and projected residential growth. It also incorporates a fair share analysis of the extent to which municipal zoning confers the capacity to accommodate anticipated future housing demand. Its recommendations are intended to promote adequate supply and diversity of housing, so as to provide current and future residents with choices in housing type, tenure, location, and cost.

HOUSING COMPOSITION

Plumstead's pace of population and housing growth from 1990 through 2000, by percentage, has been among the highest in Bucks County. (See "Population Characteristics and Trends" in this chapter for more analysis.) The total number of housing units increased from 2,295 to 4,103, a gain of nearly 79 percent, during this timeframe and was projected to increase to 4,360 units or about 6 percent between 2000 and 2010. Housing growth has been fueled by a combination of factors, including various settlements agreements and curative amendments⁷ as well as population trends and the inherent residential attractions of the township, such as good road access, high-quality public schools, and sewer system capacity. Housing growth segmented by housing type is detailed in Table 15.

Table 15
Housing Units by Type in Plumstead, 1990–2000⁸

Housing Type	1990		2000		Change, 1990–2000	
	Number	Number	Number	Percent	Number	Percent
Single-family detached	1,834	79.9%	2,889	70.4%	1,055	57.5%
Townhouses	27	1.2%	865	21.1%	838	3,103.7%
Twins and Duplexes	76	3.3%	59	1.4%	17	-22.3%
Multifamily—3 or more units (apartments, multiplexes, etc.)	76	3.3%	95	2.3%	19	25.0%
Other (mobile homes)	282	12.3%	195	4.8%	-87	-30.9%
TOTAL	2,295	100.0%	4,103	100.0%	1,808	78.8%

Source: U.S. Census

Because of the township's rural and suburban setting, most of its housing consists of single-family detached dwellings. But the construction of several larger-scale residential developments incorporating single-family attached housing (i.e., townhouses) has greatly diversified the housing stock within a short time frame, with the number of such units soaring from only 27 (1.2 percent of all housing) in 1990 to 865 (21.1 percent of all housing) in 2000. Townhouse and apartment units and mobile homes are typically more affordable than conventional single-family detached housing.

⁷ A settlement agreement is a contractual resolution to a disagreement between two parties without resorting to litigation. A curative amendment is a legal challenge to the validity of a zoning ordinance, in accordance with the procedures of the Pennsylvania Municipalities Planning Code (MPC).

⁸ Since decennial 2010 Census data was not available at the time of plan production, 1990 and 2000 Census data is provided. While data was available from the U.S. Census Bureau, 2005–2009 American Community Survey 5-Year Estimates, it appears that these estimates have significant deviations from the 2000 Census data that are not felt to be representative of Plumstead Township.

However, the degree of affordability varies significantly depending upon the features, amenities, and square footage of the unit.

Table 16 details the age of housing in Plumstead Township. Most housing is of more recent vintage, with nearly 53 percent of residential development having taken place since 1990 and more than 85 percent of all housing was built after 1950. Nevertheless, a significant share of housing, nearly 13 percent, built before 1939 represents the township's historic core of farmhouses and villages. Older homes often require more frequent and costly maintenance and repairs than newer ones.

*Table 16
Housing Age in Plumstead, 2009*

Year Built	Number	Percent
TOTAL housing units	4,005	100%
2005 or later	47	1.2%
2000 to 2004	310	7.7%
1990 to 1999	1,758	43.9%
1980 to 1989	487	12.2%
1970 to 1979	382	9.5%
1960 to 1969	281	7.0%
1950 to 1959	154	3.8%
1940 to 1949	70	1.7%
1939 or earlier	516	12.9%

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

As of 2010, the U.S. Census indicates that only 3.9 percent of the township's dwellings were vacant. About 86 percent of occupied units were owner-occupied, and nearly 15 percent were rented, compared to corresponding Bucks County figures of 77.1 percent for homeownership and 22.9 percent for rental housing.

ZONING

The township zoning ordinance encompasses a range of residential zoning districts and uses intended to provide for diversity in the housing stock. (See Appendix D, Zoning Map). The principal housing uses are: B1, single-family detached dwellings; B4, twin and duplex two-family dwellings; B5, apartments; B6, townhouses; B7, mobile homes; B9, life care/full care facilities; and B15, mixed residential use, which encourages a combination of detached and attached housing on the same site. The ordinance also allows residential conversions (Use B10).

The zoning ordinance includes several residential subdivision use types intended to conserve land, with or without the transfer of development rights, or to enable clustered, village-style

development. They are the B2 and B3 Land Preservation Subdivisions and the B8 Flexible Lot Size Subdivision, and the B16 Village Preservation Development. These subdivision types allow various forms of housing.

Over the past decade or so, there has been a significant impact from information and communications technology on the way we work and where we work. According to the residential survey, 12 percent of the respondents indicated that they work from home. The zoning ordinance provides for many types of residential accessory home occupation uses—no-impact home-based business, accessory professional office, traditional home business, repair services/craftsperson, family daycare, and lawn care service. The township will continue to support the nationwide trend of home-based businesses while minimizing the land use impacts upon neighboring properties.

HOUSING COSTS AND AFFORDABILITY

The cost of Plumstead housing reflects a number of factors, including the convenient location of the township relative to the regional labor market, the desirable character of the community, the quality of community services, and the type of housing market that exists. The cost of housing in the township tends to be among the more moderate in the region, but is still significantly higher than the countywide level.

Owner-Occupied Housing—The median value of owner-occupied housing in Plumstead as of 2000 was \$222,900, according to Census data. Housing prices peaked in 2008 and have since fallen due to a global recession triggered largely by events in real estate finance markets.

*Table 17
Housing Cost Data—Plumstead, 2010*

Total Units Sold	129
Price Range	\$105,000 - \$1,500,000
Average Price	\$371,830
Median Price	\$349,000

Source: TREND Multiple Listing Service

Local multiple listing data put the median Plumstead housing sales price at \$349,000 for 2010, which was in the middle range in its immediate area, but still nearly 18 percent higher than the countywide figure. The range of sales prices was wide, indicating diversity of housing choices.

Table 18 details median housing sale prices for 2000 and 2010 in Plumstead Township and the surrounding municipalities as well as the overall County. During this decade, the median sales price in Plumstead rose nearly 52 percent. This increase was higher than Doylestown (42.9 percent) and Tinicum (32.3 percent) townships but not nearly as high as the five remaining townships (between

54.4 and 79.5 percent), but considerably lower than the County's percentage change, which was about 70 percent during this time frame.

Table 18
Median Sales Price, 2000 and 2010, Plumstead,
Surrounding Municipalities, and Bucks County

Locality	2000	2010	Number Change, 2000–2010	Percent Change, 2000–2010
Plumstead Township	\$230,000	\$349,000	\$119,000	51.7
Bedminster Township	\$195,000	\$350,000	\$155,000	79.5
Buckingham Township	\$282,500	\$439,900	\$157,400	55.7
Doylestown Borough	\$171,900	\$334,500	\$162,600	94.6
Doylestown Township	\$245,000	\$350,000	\$105,000	42.9
Hilltown Township	\$169,700	\$262,000	\$92,300	54.4
New Britain Township	\$185,000	\$290,000	\$105,000	56.8
Tinicum Township	\$325,000	\$430,000	\$105,000	32.3
Solebury Township	\$325,000	\$520,000	\$195,000	60.0
Bucks County	\$165,000	\$279,000	\$114,000	69.1

Source: TREND Multiple Listing Service, 1/1/2000 to 12/31/2010

Distressed Sales—As a result of economic recession, foreclosures and short sales, in which the sale proceeds fall short of fulfilling the outstanding mortgage balance, have become more prevalent than before, nationally and locally. Table 19 shows distressed housing sales for the township and the county in 2010.

Table 19
Distressed Housing Sales, Plumstead and Bucks County, 2010

	Total Units Sold	Short Sale	Bank-Owned
Plumstead Township	117	7 (6.0%)	3 (2.5%)
Bucks County	4,768	279 (5.9%)	286 (6.0%)

Source: TREND Multiple Listing Service

Short sales and foreclosure sales combined totaled 8.5 percent in Plumstead. The rate of short sales in the township, at 6 percent, was similar to the countywide rate, but there was a smaller share of foreclosed (bank-owned) properties. While distressed sales have clearly been on the increase, they are not now at a level that threatens noticeable rates of spot vacancies.

ADAPTED AND SPECIAL-NEEDS HOUSING

The share of the Plumstead population with a disability was 11.1 percent in 2000, rising to 19.1 percent for those 65 years of age and older. Not all types of disability require housing modifications, but the incidence of disability provides at least a rough measure of potential demand for barrier-free adaptation or other types of housing tailored to special needs. The township's disability rates are less than the countywide figures, reflecting its concentration of younger population groups, but need for at least minor housing unit adaptation increases as people age.

ACTIVE ADULT COMMUNITIES

Active adult communities are generally broken into two types—age-restricted and age-targeted. These communities can include various housing arrangements such as single-family homes, townhouses, cluster homes, and multifamily units.

Age-restricted housing, often known as “55-plus” housing has been a popular development type over the past few years. Mainly targeted at wealthy, active, and aging baby boomers, age-restricted housing accounted for more than 17 percent of all units proposed in Bucks County in 2007. At present, there are no age-restricted communities in Plumstead, although several are situated in nearby municipalities. Age-restricted housing consists of housing for older, empty-nester households, often with community centers and other recreation facilities located within the development. Typically, age-restricted housing is designed for independent living, without direct support services to enable residents carry out tasks of daily living. Residents live in their own homes and are responsible for maintaining them.

Age-targeted housing, an alternative to age-restricted housing, is housing designed to meet the needs and preferences of older, smaller households, but without deed restrictions or other legal mechanisms to curtail occupancy by those younger than 55.

The township is receptive to proposals for active adult communities. This type of housing should be located in areas zoned for higher density, able to make use of existing or planned public water and sewer lines, and near major roadways and community facilities, particularly health care and food shopping, since its residents will be aging in place. The Bucks County Planning Commission has recommended that design standards for this type of housing adhere to the same standards, including parking and open space, applied to similarly sized and configured residential communities for general occupancy. At this time, adequate, appropriately zoned land exists to accommodate such proposals as discussed in the Development Area Analysis section below.

Housing developments for older residents, like other major subdivisions, are subject to the site analysis and resource conservation requirements outlined in the municipal subdivision and land development ordinance. The site analysis and resource conservation component is intended to

promote development that respects the site's nature features and spares resources. In addition, township officials strongly encourage such proposals to be submitted for sketch plan review, at an early stage.

OTHER SENIOR HOUSING OPPORTUNITIES

Assisted living, continuing care retirement communities that contain a range of housing types and allied services, and nursing homes are residential options most often needed by the older and frailer portion of the elderly population, and are often located near major age-restricted developments. The township zoning ordinance provides for these three development types.

Use B9, Life Care/Full Care Facility, is designed for individuals who require certain support facilities. It may include independent living units, assisted living units, personal care boarding facilities, and nursing care beds. Potential support facilities include barber shops, beauty parlors, newsstands, pharmacies, gift shops, snack bars, and handicraft shops. At least 50 percent of the site area must be maintained as open space, and 20 percent used for passive recreation. The C5 Nursing Home or Personal Care Boarding Facility Use regulates state-licensed facility types that offer skilled or intermediate care, therapy, and/or medical care to residents.

RESIDENTIAL GROWTH FORECASTS

The amount of growth in the township depends on the desirability of the area, the availability of goods and services, land availability for future development, proximity of regional transportation networks, and the accessibility to regional employment. Housing development also depends on the perceived supply and demand of housing. If there is a perception of a strong demand for, but low supply of housing in the township, a large number of units will be built. If there is a perception of a low demand for, but high supply of housing, a small number of units will be built. In addition, single-family detached housing will continue to be a large component of the township's future housing composition.

As discussed above, housing and population projections indicate that by 2021 the township will have gained 2,931 residents and 1,047 housing units beyond the 2000 Census figures.

Any forecast of future growth is tentative and subject to a given set of assumptions holding true for a defined period of time and the constraints of the projection model employed. These projections should provide a fairly good picture of housing growth to 2021. The nature of that growth will depend on future housing markets and the growth management policies and programs of the township.

The development area analysis in the next section examines the relationship of anticipated residential growth to planned future use of land, as outlined in the township's zoning ordinance.

DEVELOPMENT AREA ANALYSIS

As previously discussed, Plumstead projected growth in population and housing by the year 2021 is 14,340 residents and 5,150 dwelling units, respectively. To help determine whether sufficient area is zoned to accommodate projected growth and if Plumstead satisfies its fair share housing obligations an analysis of the township's existing development area was conducted.⁹ For the purpose of this analysis, the development area generally coincides with the portion of the township currently served by public sanitary sewer (between the Route 611 and 413 corridors), with a few exceptions that include parcels that are preserved from future development or contain existing parkland. For the purpose of this analysis, the five residential zoning districts (R-1, R-2, R-3, R-4, and R-5 residential districts), and two village zoning districts VR—Village Residential and VC—Village Center districts were examined. All of Plumstead's villages were included in the development area analysis with the exception of Point Pleasant, since this is the only village that lies outside of township's designated sanitary sewer area. The remaining villages are located inside the sanitary sewer area. Nonresidential zoning districts located within the development area (C-1, Neighborhood Commercial, C-2, Highway Commercial, LI, Light Industrial, and portion of the Quarry district) are not included in this analysis since the focus is on the capacity of residential development which is not permitted in these districts.

The analysis of the development area takes into account both the potential supply and demand of residential development to ascertain whether or not sufficient capacity exists in the township to accommodate the projected growth rates until the year 2021, which is the 10-year time frame for this plan.

Current planning convention suggests that the capacity of a development area be reevaluated every five years to ensure that it's adequate in area and responsive to the current pace of development.

HOUSING UNIT DEMAND

To identify Plumstead's 2021 housing unit demand, the 2010 Census housing total (4,465) for the township was subtracted from the 2021 housing projection (5,150), which results in tentative demand for 685 dwelling units. To account for potential housing units from recently proposed development, the total units from developments/subdivisions that have received final plan approval (621) were removed from the tentative dwelling unit figure (685), resulting in a projected housing unit demand of 64 units within the development area.

⁹ The development area is the portion of a municipality intended to accommodate the majority of its higher-density future growth.

DEVELOPMENT AREA CAPACITY

In order to assess the capacity of Plumstead’s development area, an evaluation of lands available for future development was conducted to determine the number of units that could be constructed on these lands. Parcels consisting of vacant, agricultural, or rural residential land uses are considered to have future development potential. Rural residential uses, which are more likely to be further subdivided than smaller lots, consist of single-family residential lots of 5 acres or greater.

The capacity of each developable parcel was determined by multiplying the base site area¹⁰ by the maximum density permitted by the underlying zoning district. For any potentially developable lots that could yield more than four units, the base site area was determined by subtracting 15 percent of the lot area to account for the provision of roads/driveways and utility easements. Maximum density of a parcel was determined by selecting the use option that provided the greatest density or resulted in the greatest yield/highest number of dwelling units (for instance, if Use B3, Land Preservation Subdivision with Transfer of Development Rights results in a slightly higher housing unit yield than Use B1, Single-Family Detached Dwelling, the Use B3 density is applied). For rural residential lots, a single unit was removed from the potential lot yield to account for the future subdivision of the existing dwelling unit as a separate lot.

The result of this analysis suggests that the current housing unit capacity of Plumstead’s development area not only satisfies the 2021 housing projections, but provides a significant unit surplus. With a development area capacity of 1,447 units and a total housing unit demand of 64 units, the difference is a surplus of 1,383 units.

MULTIFAMILY FAIR SHARE ANALYSIS

In addition to providing sufficient capacity to accommodate projected housing growth as discussed above, Plumstead needs to ensure it is providing for its “fair share” of multifamily uses. Multifamily fair share focuses on municipality’s responsibility to provide for a full-range of housing types including apartments and townhouses. For purposes of this analysis, multifamily housing units include single-family attached units (townhouses) and multifamily structures containing 3 or more units (apartments and multiplexes). Twin and duplex units are not considered multifamily uses. The following highlights two methods that can be used to analyze multifamily opportunities that currently exist in the township.

¹⁰ Section 27-202 of the township’s zoning ordinance defines ‘base site area’ as the total area of a site minus: the existing road right-of-way, land which is not contiguous, land shown on previous subdivision or land development plans as reserved from development for natural resource protection, recreation, open space preservation or other uses, and land that is contained in existing easements for utilities.

LAND AREA

Zoning land for a variety of multifamily housing types is one way to provide for multifamily uses. Plumstead permits various multifamily uses and building arrangements under Use B5, Multifamily – Apartments and Use B6, Multifamily–Townhouse, which are both permitted in the R-4, R-5, VR, and VC zoning districts. Although the courts have not established a threshold for the minimum percentage of land that needs to be zoned for multifamily use in a municipality, designation of specific percentages of land designated for multifamily development has been upheld by the courts on a community-by-community basis, depending upon whether or not a municipality is in a logical area for growth or experiencing growth pressure.¹¹

The R-4, R-5, VR, and VC zoning districts total about 839 acres, which is 4.8 percent of the entire land area of the township. Additionally, 11.5 percent of the lands in the R-4, R-5, VR, and VC districts are available for development (97 acres). Based upon the amount of land zoned and available for the construction of multifamily dwelling units within the township, it appears that Plumstead provides for its fair share of these types of dwelling units.

PERCENTAGE OF MULTIFAMILY UNITS

Another way to show how Plumstead is providing for its multifamily fair share uses is to compare the percentage of multifamily housing units in the township to the percentage of the County. According to the 2000 U.S. Census figures, the percentage of dwelling units in the County classified as multifamily housing units was 30.8 percent. When the 2021 housing projection for the township (5,150 units) is multiplied by the County’s multifamily percentage, it results in a township target figure of 1,586 multifamily units.

¹¹ *Cambridge Land Company v. Marshall Township*, 560 A.2d 253 (Pa. Commonwealth. 1989). The township provided apartment use on 2.75 percent of its total land area and 1 percent of the land set aside for this use was undeveloped. Based on additional factors, such as low growth pressure, the court upheld the ordinance.

Appeal of M.A. Kravitz Co. Inc. 460 A.2d 1075 (Pa. 1983). Wrightstown Township provided for multifamily use on 0.6 percent of its total land area. Based upon additional factors, including that the community was not a logical area for growth, the court upheld the township’s ordinance.

Hostetter v. Londonderry Township, 437 A.2d 806 (Pa. Commonwealth. 1981). The township zoned 2.6 percent of its total land area for multifamily use. Based upon potential units under permitted densities and the context of minimal development pressure, the court sustained the ordinance.

Willistown Township v. Chesterdale Farms, Inc. 341 A.2d 466 (1975). The township provided for apartment development on 0.7 percent of its total land area. The court ruled that this was a token amount and was therefore exclusionary.

According to the Census, the township had 960 multifamily units in 2000. Municipal records show that between 2000 and 2010, 47 multifamily units¹² were constructed in the township. In addition, municipal records indicate that 395 multifamily units may result from latent development (i.e., development that has received final plan approval). Thus, the current supply of multifamily units and potential supply of multifamily units from proposed development in the township is 1,402. When this supply is subtracted from the 2021 target figure of 1,586 multifamily units, it results in demand of 184 multifamily units.

To determine if the development area could satisfy this demand, the developable parcels in the zoning districts that permit multifamily uses was calculated. The development area yielded 446 multifamily units. When the 184-unit demand is subtracted from the development area capacity, there is a surplus of 262 units. Therefore, Plumstead satisfies the legal requirement for providing its fair share of land zoned and available for multifamily housing.

NONRESIDENTIAL DEVELOPMENT

Understanding the strengths and weaknesses of Plumstead's nonresidential land use base as well as the employment characteristics of township residents is important for making policy decisions as they relate to zoning and infrastructure. This information is intended to serve as a guide to help maximize future economic development opportunities.

EMPLOYMENT

Table 20 provides information on employment, resident occupations, and industry is the most recent data available from the U.S. Census. According to the Census Bureau's American Community Survey 5-Year Estimates, about 70 percent of the township's population, age 16 years or older, participated in the labor force. The Census data indicate that 3.8 percent of township residents were unemployed in 2009. In comparison, the County labor force had a 68 percent participation rate and a 5.1 percent unemployment rate in 2009.

*Table 20
Employment, Plumstead Township, and Bucks County, 2009*

Locality	Population, 16 years and older	Civilian Labor Force	Armed Forces	Not in Labor Force	Participation Rate	Unemployment Rate
Plumstead	8,712	6,011	80	2,621	69.9%	3.8%
Bucks County	494,167	335,286	941	157,940	68.0%	5.1%

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

¹² According to municipal records, this figure includes units constructed between May 1, 2000 (cut-off date for the 2000 Census) and December 31, 2010.

As of November of 2010, the Pennsylvania Department of Labor and Industry reported Bucks County's unemployment rate at 7.7 percent. Although municipal-level data is not available at this time, it is possible that the township's current unemployment rate is higher than the 2009 rate due to the ongoing national recession but probably not to the extent of the County's percentage increase.

The following two tables provide insight to the employment characteristics of township residents. The first table indicates how residents are employed by occupation. Occupation is the kind of work a person does to earn a living regardless of what industry the occupation is classified under. Industry, as shown in the second table, is the type of activity at the workplace, the sector of the economy to which a specific occupation belongs. In some instances, a resident's occupation and industry will be the same (e.g., a construction worker), but not in all cases.

As shown in Table 21, in 2009, most Plumstead residents had white-collar occupations, with almost half of the township's workforce employed in managerial, professional, or related occupations. One quarter of residents worked in sales and office occupations, followed by 10.6 percent of workers employed in service occupations.

*Table 21
Resident Occupation, 2009*

Occupation	Number	Percentage
TOTAL Civilian Employed Population (16 years and over)	5,782	100%
Management, Professional, and Related Occupations	2,884	49.9%
Service	611	10.6%
Sales and Office	1,443	25.0%
Farming, Fishing, Forestry	0 ¹³	0%
Construction, Extraction, Maintenance	427	7.4%
Production, Transport, Material Moving	417	7.2%

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

For resident employment by industry, in 2009, Table 22 indicates that the largest share of township residents, 23.3 percent worked in educational, health, and social service fields. This was followed by 15.1 percent of the township workforce in manufacturing jobs, 10.7 percent in retail trade, and 10.2

¹³ The 2010 Decennial Census does not include data for resident occupation. The Census Bureau's 2005-2009 American Community Survey 5-Year Estimates indicates that no residents worked in farming, fishing, and forestry. The previous 2000 Census indicated that there were 31 residents that worked in this occupation. Therefore, this estimate from the American Communities Survey may not be representative of the actual number for this occupation.

percent in services which includes professional, scientific, management, administrative and waste management jobs.

Table 22
Resident Employment by Industry, 2009

Industry	Number	Percentage
TOTAL Civilian Employed Population (16 years and over)	5,782	100%
Agriculture, Forestry, Fishing and Hunting, and Mining	25	0.4%
Construction	417	7.2%
Manufacturing	872	15.1%
Wholesale Trade	211	3.6%
Retail Trade	619	10.7%
Transportation and Warehousing, and Utilities	189	3.3%
Information	134	2.3%
Finance, Insurance, Real Estate, and Rental and Leasing	511	8.8%
Professional, Scientific, Management, Administrative and Waste Management Services	592	10.2%
Educational, Health, and Social Services	1,349	23.3%
Arts, Entertainment, Recreation, Accommodation, and Food Services	316	5.5%
Other Services	225	3.9%
Public administration (government)	332	5.6%

Source: U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates

The high percentage of residents employed in managerial, professional, and related occupations, with many of those in the educational, health and social services sector can, in part, be attributed to the educational attainment of many township residents. Also, Plumstead's estimated median household income in 2009, which was more than \$16,000 greater than that of the county, correlates with resident occupation and employment figures since management and professional occupations, especially those in the educational, health, professional and management sectors, tend to provide higher earnings than most other occupations.

According to the comprehensive plan survey, 18 percent of the respondents either work at home or within Plumstead Township. When asked what priority employment opportunities should have when planning for the future of the township, 76 percent of the respondents indicated that it should be a high or medium priority. The township will continue to foster additional job creation in an effort to provide business employment opportunities for local residents.

NONRESIDENTIAL LAND USE CHARACTERISTICS

Concentrating nonresidential land uses to appropriate areas in the township preserves sensitive natural resources and rural areas. With the exception of the Village Commercial zoning district that includes the villages of Point Pleasant and Gardenville and two other areas zoned for quarry uses in central and eastern Plumstead, all of the township's nonresidential districts are located along or in close proximity to either the Route 611 or Route 313 corridors in the western half of the township. Commercial and industrial zoning districts, which typically allow for more intense land uses requiring convenient road access, are located primarily along Route 611 and to a less degree along the southeastern portion of Route 313. While there are a few existing nonresidential uses located outside of these districts, the township's commercial and industrial uses primarily fall within the designated nonresidential districts. Village areas containing a mix of residential and nonresidential uses have been zoned to preserve and encourage the continuation of existing mixed land use patterns.

ZONING

For a complete understanding of the nonresidential development potential in the township, the following narrative briefly describes the purposes and ordinance requirements for each nonresidential district in Plumstead. The district descriptions are followed by a brief discussion on district locations within the township and the potentially developable lands within those districts. To determine potentially developable lands, acreages of vacant, agricultural, and rural residential properties within each district have been calculated. As with any zoning district, the development potential of any land is dependent upon the presence of natural resources and applicable resource protection standards.

This inventory focuses solely on nonresidential districts that accommodate commercial, office, institutional, industrial, and mixed uses. The Q Quarry district has not been included since that is considered a special use district specific to extraction-type uses. (See Appendix D, Zoning Map.)

LI – Light Industrial District The LI district permits all defined industrial and office uses, as well as some commercial, institutional, and recreational facility uses. Unless a greater area or dimensional requirement applies to a specific use, the LI district's minimum lot area is 2 acres and the maximum impervious cover permitted is 65 percent. There are four areas of LI zoning in Plumstead, all of which are located along or within close proximity to Route 611.

Of the total 478.5 acres of land zoned LI in the township, approximately 167.4 acres, or almost 35 percent of this district is potentially developable. Slightly more than 85 acres of vacant and rural residential lands are located in the LI district just north of Plumsteadville extending to the township's border with Bedminster. Another LI-zoned area with significant development potential is located further south along Old Easton Road, just north of Tohickon Middle School, where two

agricultural parcels combined total 79.3 acres. The two LI districts in the southern portion of the township, bordering Buckingham and Doylestown, have little remaining developable land with slightly less than 3.0 acres of vacant land between the two locations.

C-1 – Neighborhood Commercial District The least intense of Plumstead’s three commercial districts, the C-1 district permits a variety of office and commercial uses on a scale intended to serve the needs of nearby neighborhoods. Unless a specific use has different standards, the minimum lot area is 20,000 square feet and the maximum impervious surface coverage is 60 percent in the C-1 district. There are generally five areas of C-1 zoning in Plumstead, four of which are located along Route 611. The other C-1 district is located in the vicinity of Fountainville, along Route 313 on both sides of Ferry Road.

Approximately 19.4 acres of C-1-zoned land are potentially developable, accounting for about 17.5 percent of the total 110.9 acres in this district. With the exception of the C-1 district located between Easton Road and Route 611, all other areas with this zoning have some potentially developable land. Each of the C-1 districts north of where Route 611 and Easton Road intersect contain either some vacant or rural residential land ranging from 8.91 acres near Ferry Road/Point Pleasant Pike, to 5.69 acres just north of Valley View Mobile Home Park, to 4.29 acres near Plumsteadville. The C-1 district located near Fountainville contains slightly over half of an acre of vacant land along Ferry Road.

C-2 – Highway Commercial District The C-2 Highway Commercial District permits a mix of commercial, office, and institutional uses. The minimum lot area is 60,000 square feet with a maximum building coverage of 45 percent and a maximum impervious surface ratio of 65 percent of the base site area.

Plumstead contains one area of C-2 zoning which is located in the southern portion of the township and borders both Doylestown and Buckingham townships. Of the total 124.32 acres in this district, only two parcels totaling 6.02 acres are currently vacant. Many of the region’s automobile dealerships are located within this district along Easton Road.

C-3 – Planned Shopping Center District The intent of the C-3 district is to provide for larger-scale commercial and business uses that require location along well-traveled highways. The minimum lot area is 80,000 square feet and the maximum building coverage is 15 percent. To accommodate greater parking needs for many of the uses, the maximum impervious surface ratio in this district is 60 percent of the site.

The township contains two separate areas of C-3 zoning, both of which are located along Route 611. The larger C-3 district is adjacent to Routes 313 and 611 near Cross Keys and borders Doylestown Township in the southern portion of the township. The smaller C-3 district is located in

Plumsteadville at the intersection of Stump Road and Route 611 (consisting of the Plumstead Square Shopping Center).

Almost 99 percent of the C-3 land in the township is currently developed or occupied, leaving not quite one and a half percent of land in this district as potentially developable. There are two vacant parcels within this district; one contains 0.16 acre and is located along Stump Road in the Plumsteadville area and the other contains 0.64 acres and is located off of Easton Road near Cross Keys.

VC – Village Center District This district is located throughout the township and coincides with the mixed use villages of Plumsteadville, Fountainville, Danboro, Gardenville, and Point Pleasant. The purpose of this district is to encourage a mix of uses, residential and nonresidential, in a way that enhances and replicates traditional village development. The intensities are intended to allow infill development compatible with existing conditions in the villages. For most permitted uses, the minimum lot size is 7,500 square feet and the maximum permitted impervious surface ratio is 50 percent of the lot area.

Approximately 81.2 acres of VC-zoned land in the township are potentially developable, representing almost 25 percent of the total 350 acres in this district. The VC districts containing the most land area—Danboro, Plumsteadville, and Point Pleasant—also contain the most potentially developable land. With slightly over 33 acres of vacant and rural residential land combined, Danboro contains the most potentially developable land. This is followed by Plumsteadville with approximately 23 acres of vacant and rural residential, and Point Pleasant with slightly less than 23 acres in those categories. The VC district at Gardenville contains one vacant parcel consisting of 0.96 acre, and Fountainville contains two vacant parcels that total 0.94 acre.

The existing nonresidential districts offer future opportunities for nonresidential growth and development. In total, approximately 275 acres of potentially developable land remains in the township's five nonresidential zoning districts. The commercial districts (i.e., the C-1, C-2, C-3, and VC districts) collectively have approximately 107.5 acres of potentially developable land. This equates to roughly 17 percent of the land in the four commercial districts. While overall this is adequate to address commercial needs in the near future, some districts, specifically the C-2 Highway Commercial and C-3 Planned Shopping Center, are almost completely developed, but infill and redevelopment opportunities of occupied parcels exist. The industrial district (i.e., the LI district) contains approximately 167.4 acres of potentially developable land, equating to slightly over one-third of the district's total land acreage. This district has ample room to accommodate future industrial development.

The potential for future nonresidential development on these lands, coupled with opportunities for redevelopment within the nonresidential districts, will provide additional economic and employment opportunities within the township.

COMMERCIAL CORRIDOR ISSUES

The arterial highways in Plumstead include Routes 313, 611, and 413. Given the extent of nonresidential and uses and zoning districts present along these corridors, the Route 611 and the southern portion of Route 313 corridor function as a commercial corridors in Plumstead Township. A common problem with commercial corridors is proliferation of unplanned growth and circulation patterns that results in strip commercial development. Strategic planning can improve the appearance and function of commercial corridors and make them safer to travel, provide an identity to various stretches of the roadways, and create a more attractive place in which to work and shop.

The township's ordinance regulations should be re-examined to ensure that sufficient standards are provided to promote attractive, well-planned development that will meet the commercial and service needs of the community. There are a number of design techniques that could be adopted that will improve the appearance and quality of future development and redevelopment along the commercial corridors.

One such method would be the use of access management regulations which would provide benefits to traffic flow as well as to the function and appeal of the township's commercial areas. Such regulations could involve standards for shared driveways, driveway spacing, planted median strips, protected left turn lanes, and any other appropriate access control measures. As recommended in the Transportation chapter of this document, an access management plan should be developed for the highway corridors in the township. In the interim, consideration could be given to adopting basic access management controls in line with PADOT's access management model ordinance recommendations.

Other design considerations that could be implemented through ordinance regulation include requiring improved pedestrian connections between uses and providing for pedestrian-friendly amenities such as sidewalks, outdoor plazas, patios, water features and special landscaping requirements. Pedestrian connections between commercial developments and nearby residential areas should be encouraged since linking residents with services would help to reduce the number of trips on the public road system and would improve walkability in the township.

Other strategies such as orienting buildings closer to the roadway and providing parking in the rear of buildings, providing unified facades which help to create architectural interest, and eliminating drive-through establishments in front of buildings will all help to improve the appearance of Plumstead's commercial corridors.

COMMERCIAL NODES

Nodes or concentrated commercial areas along a commercial corridor are an alternative to strip commercial development. Future development along the 611 corridor should be in the form of planned commercial nodes which emphasize unified architectural theme and building facades, pedestrian interconnections, and public spaces. Existing commercial areas should be improved or redeveloped to incorporate these features when possible.

There are two identifiable commercial nodes in Plumstead— Cross Keys area in the southern portion of the township and the village of Plumsteadville in northern portion of the township that provide opportunities for further economic development as discussed below.

CROSS KEYS

The southern portion of Route 611 in Plumstead is a continuation of the commercial corridor extending from Doylestown Borough and Doylestown Township. This portion of Route 611, along with nearby Route 313 up to its intersection with Saw Mill Road is known as Cross Keys.¹⁴ This area is a gateway into Plumstead Township from points south and contains a variety of commercial uses including auto dealerships, auto repair, auto paint shops, retail, and shopping center; *however, the area contains underutilized lots and lacks a sense of cohesion or identity.* The primary zoning district in this portion of the township is C-2 Highway Commercial; along with some land zoned C-3 Shopping Center and LI Light Industrial.

The concentration of automobile dealers in Cross Keys—Fred Beans, Thompson, and Keenan dealerships—offer a wide array of new, used, and pre-owned vehicles from a variety of manufacturers. The highest concentration is of dealerships are located within the boundaries of Plumstead Township. While the future of the national economy is uncertain, the consolidation or closures of auto dealers trend witnessed during the recent economic recession may be an opportunity for township officials re-examine the vision of the Cross Keys area. For instance, as an effort to promote economic activity and a business-friendly corridor, consideration should be given to providing for additional land uses that would be consistent with the intent of the district. Uses such as office/business parks, would complement the mix of uses along this corridor and, with appropriate design criteria, could provide a boulevard-type atmosphere. Regulations to affect

¹⁴ According to the book *Place Names in Bucks County* (1955), Cross Keys was taken from the name of a watering hole (and later an inn) established about the time William Doyle obtained his license to keep a public house. However, the real history of the names goes back much further. Originally, “crossed keys” served as the arms of the Papal See, which were borrowed from the emblem of Saint Peter. By the seventeenth century, Cross Keys had been adopted for lay purposes as the name for taverns throughout England. British subjects who settled in the New World naturally gave familiar appellations to their favorite watering holes here in America. Thus, the Doylestown community known as Cross Keys was born. Because of the growth of the surrounding townships during the last two and a half centuries, the area today known as Cross Keys is shared by four municipalities: Doylestown Township, Doylestown Borough, Plumstead Township, and Buckingham Township.

permitted uses in this area of the township may be better accomplished through use of an overlay zoning district specific to this area.

PLUMSTEADVILLE

Located at the crossroads of Route 611 and Stump Road at the northern end of the 611 corridor, Plumsteadville is primarily a commercial village that contains many commercial uses, including a shopping center, as well as a mix of single-family residential and apartment buildings. As discussed in the Village Planning chapter, Plumsteadville is in a prime location for developing into a “town center” or “hub”.

Consideration could be given to rezoning opportunities, such as expanding the existing VR Village Residential district along Stump Road to the VC Village Commercial District to provide additional nonresidential (mixed-use) opportunities that would enhance Plumsteadville’s classification as a town center. Any future rezoning in this area should be predicated by a village zoning study as recommended in the Village Planning chapter of this document.

SUMMARY OF RECOMMENDATIONS

HOUSING

- Monitor zoning ordinance to ensure continued suitability of residential use types and complementary accessory uses.
- Support public and private efforts to rehabilitate and maintain housing stock, including, but not limited to, disability-adaptive improvements, rehabilitation of owner-occupied and rental properties, code enforcement, and historic preservation. Give particular attention to maintenance of entry-level rental and other housing.
- Evaluate the potential for mixed use arrangements that would permit rental units (apartments) and office/retail establishments within the same structure in village centers or other appropriate areas within the township.
- Consider proposals for age-restricted and age-targeted residential development, appropriately situated near infrastructure and community services. Encourage submittals of such proposals, incorporating site analysis and resource conservation plans, at the sketch plan stage.
- Perform a Development Area analysis every 5 years to ensure there is adequate land available for future development.

NONRESIDENTIAL DEVELOPMENT

- Provide planned commercial nodes along commercial corridors emphasizing unified architectural theme and building facades, pedestrian interconnections, and public spaces when possible.

- Review ordinance regulations to ensure that sufficient standards are provided to promote attractive, well-planned development that will meet the commercial and service needs of the community.
- Consider adopting basic access management controls in line with standards provided in PADOT's access management model ordinance.
- Align the township's ordinances (in coordination with surrounding municipalities) with the vision of the Cross Keys area by providing additional uses/regulations to enhance economic development opportunities.
- As part of conducting a village zoning study for Plumsteadville, examine opportunities to expand this village into a town center or hub.
- Continue to foster additional job creation in an effort to provide business employment opportunities for local residents.



Transportation

Traffic significantly impacts life in Plumstead Township. Maximizing safety, efficiency, and comprehensiveness of facilities for automobiles, pedestrians and bicycles available to residents and workers is necessary for improving the quality of life, economic development and recreation opportunities.

The continued development and redevelopment of the township is dependent on the advantages that a well functioning transportation system provides. Maintaining and enhancing the quality and efficiency of the streets and highways in the township will support economic development efforts. This chapter examines the existing transportation system in the township and provides analysis and recommendations for the various modes of transportation that serve it.

STREET SYSTEM

The township zoning ordinance provides a standardized street classification system that is appropriate for municipal planning purposes. This system classifies roads according to their intended function. The network of highways and roadways is functionally differentiated and identifies the characteristics and purpose of the roads. The township subdivision and land development ordinance contains policies regarding street rights-of-way widths and cartway widths based on the street classifications. The categories provided in the township zoning ordinance are shown below.

EXPRESSWAYS

- a. Provides service for major through movements and for long trips that bypass urban areas.
- b. Serves long distance intracity travel.
- c. Most facilities have fully or partially controlled access.
- d. Usually accounts for high volumes.

ARTERIALS

- a. Designed to carry large volumes of traffic.
- b. Provides service to moderate length trips.
- c. Ideally, should not penetrate identifiable neighborhoods.
- d. Connects to major collectors.
- e. To protect carrying capacity, curb cuts and direct access from abutting properties should be limited.

MAJOR COLLECTORS

- a. Length is generally shorter than arterials but longer than local streets.
- b. May penetrate identifiable neighborhoods.
- c. Collects traffic from minor collectors and local streets and channels it to arterials.
- d. Provides service for both land access and for local traffic movement within neighborhoods, commercial areas, and industrial areas.

MINOR COLLECTORS

- a. Connect major collectors with local streets.
- b. Similar to major collectors in that they provide connections to arterial roadways, but they generally carry smaller traffic volumes and allow for access from abutting properties.

LOCAL STREETS

- a. Comprises all facilities not on higher systems.
- b. Provides access directly to land uses and access to higher order systems.
- c. Offers minimum through service.

The roads in Plumstead are classified by the township zoning ordinance and highlighted on Figure 3, Functional Street Classification as follows:

EXPRESSWAY

- Easton Road (U.S. Route 611 Bypass)

ARTERIAL

- Swamp Road (Route 313)
- Durham Road (Route 413)
- Easton Road (US Route 611)

MAJOR COLLECTOR

- Applebutter Road
- Burnt House Hill Road

- Carversville – Wismer (a.k.a. Wismer) Road
- Curly Hill Road
- Danboro-Point Pleasant Pike
- Ferry Road (Danboro-Point Pleasant Pike to River Road)
- Ferry Road (Route 313 to Danboro-Point Pleasant Pike)
- Gordon Road
- Groveland Road
- Landisville Road
- Old Easton Road
- Potters Lane (Route 413 to Stump Road)
- River Road (Route 32)
- Sawmill Road
- Stump Road (Route 313 to Covered Bridge Road)
- Tollgate Road
- Township Line Road

MINOR COLLECTOR

- Bergstrom Road
- Bradshaw Road
- Covered Bridge Road
- Dillon Road
- German Road
- Haring Road
- Kellers Church Road
- McNeal Road
- Meetinghouse Road
- Potters Lane (Stump Road to Township Line Road)
- Ridgeview Drive
- Schlentz Hill Road
- Silo Hill Road
- State Park Road
- Swagger Road
- Tohickon Hill Road
- Twin Silo Road
- Valley Park (a.k.a. Myers) Road
- Worthington Road

LOCAL

- All other roads in the township

Another aspect of street classification is availability of federal funds and cost sharing dispensed by the state for certain classifications. Easton Road (U.S. Route 611) is eligible for federal funding as it is a U.S. highway. Improvements for state-owned roads such as Durham Road (S.R. 0413) and Swamp Road (S.R. 0313) are funded by the state. Local streets are not eligible for federal funding but are eligible for funds are generated by local taxes and Liquid Fuels tax reimbursements from the state.

TRAFFIC CIRCULATION SYSTEM

Currently, the township's arterials experience capacity issues during peak periods due to large volumes of traffic which pass through the township, with no origin or destination within the township. Traffic generated in the township and through traffic is funneled onto the township's arterial roads, primarily Easton Road (US Route 611) and Swamp Road (Route 313).

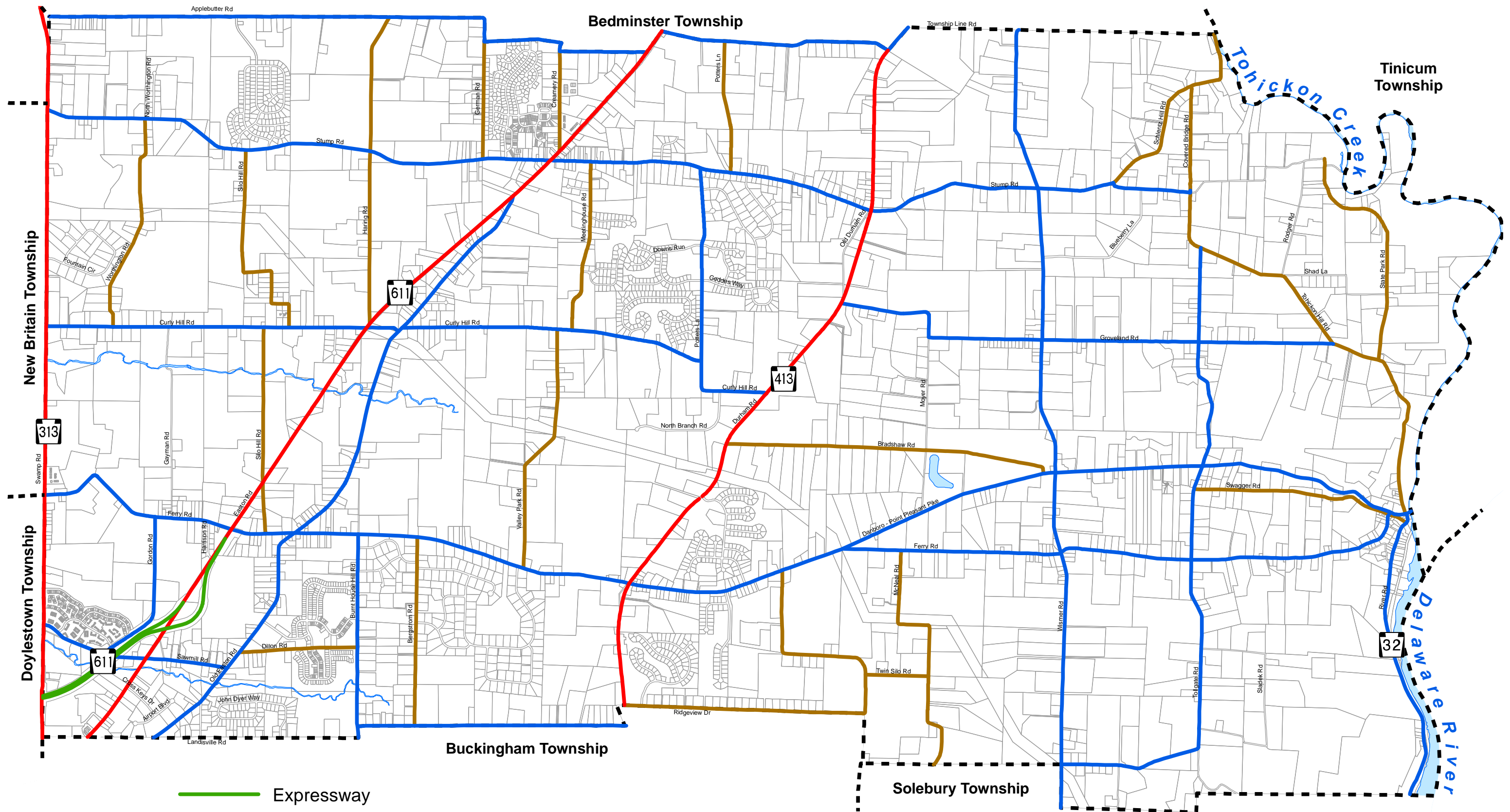
Easton Road (U.S. Route 611) is a major north-south route for traffic passing through and within Bucks County. Easton Road provides connections to Easton to the north and Doylestown and Philadelphia to the south. Several congestion points occur along its route through Plumstead. During the morning and evening peak periods, congested conditions currently exist at Route 611's intersection with Silo Hill Road and in the Stump Road commercial area. The congested conditions in the Stump Road area are primarily related to the series of traffic signals located along Route 611 from Old Easton Road to Stump Road. Two of these traffic signals provide access to the commercial developments located just south of Stump Road. Left turn lanes are provided on Route 611 at all three signalized intersections in this area.

Swamp Road (Route 313) is the primary connection between Doylestown and the upper Bucks area, namely Quakertown. Swamp Road is a two-lane road with wide shoulders. During the morning and evening peak periods, congested conditions currently exist at Swamp Road's intersection with Ferry Road and Stump Road. Left turn lanes are provided on Swamp Road at the Ferry Road intersection, but do not exist at the Stump Road intersection. The Route 313 Corridor Project is currently programmed on the Delaware Valley Regional Planning Commission Transportation Improvement Program. This project is intended to address congestion related to the Stump and Ferry road intersections with Swamp Road, as well as construct a center turn lane on Swamp Road to remove left turning vehicles from the traffic stream.

TRANSPORTATION IMPROVEMENT PROGRAM

One of the key elements of the comprehensive planning process is a transportation program. The focus of a transportation program should be on transportation-related impacts of local land uses, and a long-range traffic improvement strategy. This may be accomplished by periodically monitoring and evaluating the conditions of the township's road system. Information collected through traffic counts, street maintenance, and accident reports are important resources for determining future street improvement projects.

The Bucks County Transportation Improvement Program (BCTIP) is an inventory of transportation-related improvements requested by municipalities, concerned citizens, transportation studies, and other sources. In order to develop the BCTIP, an appeal is made to all the municipalities to put forward projects for the program update. Once this list is completed, the Bucks County Planning Commission (BCPC) Board approves it. Once the BCPC Board approves the BCTIP, it is submitted to



**FIGURE 3
FUNCTIONAL
STREET
CLASSIFICATION**

**PLUMSTEAD TOWNSHIP
COMPREHENSIVE PLAN**



Prepared by
Bucks County Planning Commission
Geographic Information Systems Section
2010



the Delaware Valley Regional Planning Commission (DVRPC) to be included as candidate projects for the regional TIP. The regional TIP is updated every two years, in coordination with PADOT's Twelve Year Plan (TYP). The regional TIP lists all projects that intend to use federal and/or state funds for their engineering, right of way costs and/or construction costs.

The TIP update includes re-evaluating existing project schedules and costs. Once the schedules and costs have been updated for each existing project, some new projects (candidate projects) may be added to the TIP. Since this list must be financially constrained per the requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU 2005), the addition of candidate projects is dependent upon federal allocations of transportation funding. DVRPC, in conjunction with the member governments of the region, then ranks and selects these potential projects from candidate projects lists (i.e., county TIP's) submitted by the member governments. The TIP is then submitted to the DVRPC Board for their approval. Once approved, the TIP is then submitted to PADOT'S to be included in the state TIP.

As of the 2011–2014 DVRPC TIP, there were two projects currently programmed for funding in Plumstead Township. The township should continue to support these existing projects which have been allocated federal funding and continue to work with the Bucks County Planning Commission to develop a list of transportation improvements needed within the township. These improvements should be ranked and submitted to the county for consideration for future regional TIPs.

PROJECTS

The projects currently programmed on the 2011–2014 DVRPC TIP include:

ROUTE 313 CORRIDOR PROJECT (MPMS# 57619)

- Project includes intersection improvements at Route 313 and Ferry Road.
- A center turn lane will be installed from Ferry Road to Broad Street.
- Two bridges will also be replaced.
- TIP only include funding for final design. No funding for right of way or construction included on TIP.

RIVER ROAD BRIDGE REPLACEMENT (MPMS# 69912)

- Replacement of the structurally deficient and functionally obsolete bridge.
- Bridge is located on River Road, between Cafferty Road and Ferry Road.
- Spans Tohickon Creek.
- Construction is programmed for \$5,000,000 in FY 2013.

ESTABLISHING THE TRANSPORTATION/LAND USE CONNECTION

Land use patterns and intensity influence the roadway network. Likewise, the roadway network can influence land uses and development pressures. Just as new or expanded transportation systems create new access opportunities that attract new development, new development patterns create a need for additional transportation facilities.

This continuing cycle has been the traditional route by which most suburban areas have developed. Establishing the link between land use and transportation can provide numerous benefits for the community:

- Incorporating land use considerations into transportation planning can influence future development patterns and ensure that transportation facilities have adequate capacity to meet demand;
- Land use patterns that are matched to the transportation system can help relieve congestion and traffic on existing roads, which in turn reduces the requirements of constructing new transportation facilities;
- Providing the link between land use and transportation will reduce congestion, improve mobility, improve air quality and preserve additional open space, all of which will help to create a more attractive and livable community.

The township should consider the transportation implications of local land use decisions, changes of zoning, and future developments. Future implications should be coordinated with county, state, and regional governments.

CONTEXT SENSITIVE DESIGN SOLUTIONS

Context Sensitive solutions are a proactive approach to transportation planning, design and implementation that examines the extensive context the transportation network plays in enhancing communities and natural environments, whether urban, suburban, rural, scenic or historic. The concept involves asking questions first about the need and purpose of a transportation project, and then equally addresses safety, mobility, and the preservation of scenic, aesthetic, historic, environmental, and other community-defined values.

Context sensitive solutions consists of a collaborative, interdisciplinary approach in which citizens are part of the design team. Support from stakeholders is received at the beginning of a project, rather than negotiating support as the project nears completion. Context sensitivity emphasizes the broad nature of solutions to transportation needs by focusing on enhancing the quality for transportation users, nearby residents and businesses and the surrounding environment. The township should use a context sensitive design approach as roadways and bridges in the township are being considered for reconstruction or replacement.

ACCESS MANAGEMENT

The efficiency of a roadway is compromised when access is not properly managed. Improper access control includes access points that are too close together and access points that are uncoordinated with each other or the general flow of traffic. Roadways function best when access is managed. Access management methods include reducing the number of driveways, combining access points, and aligning intersections. Aligning intersections minimizes potential conflict points which are locations where vehicles have to cross paths.

Access management is both a land use and traffic issue. It not only includes physical access improvements to minimize vehicular conflicts but also calls for land use controls and incentives that are linked to the development policies of the community and the capabilities of the transportation system. The planning challenge is not merely how to provide driveways or how to design roadways, storage areas, or parking. The challenge is how not to limit new development in order to expedite traffic flow. Therefore, the township must take into account the access requirements of businesses that may locate in the area, as well as those vehicles traveling through the area.

The Route 611 corridor is a highly commercialized area in the township. Unfortunately, the corridor also experiences serious traffic congestion problems during the morning and evening peak periods. The construction of a connector road or reverse frontage road is one potential access management option that may be applicable to the Stump Road area of Route 611. (In essence, the connector road would be an extension of German Road, from Stump Road through to Route 611.) The connector road could relieve some of the congestion along Route 611 while providing potential access to existing and future development in the area. The connector road should include a sidewalk providing improve pedestrian access within the village of Plumsteadville.

Plumstead Township should develop an access management plan. This plan should include an analysis of current and projected land use and their associated traffic conditions. The plan should include an implementation plan that establishes priorities and the responsible agencies for completing the roadway improvements or municipal ordinance amendments. The Route 611 Corridor in the area of Stump Road should be investigated to determine if a reverse frontage road is feasible. PADOT has completed developing model ordinance language for access management. PADOT's Center for Program Development should be consulted during the development of the plan.

One potential technique to promote access management is through the Municipalities Planning Code's provision for an Official Map. The Official Map process provides a legal means for designating locations of future public facilities. Designating public facilities on the official map allows the municipality to delay a land development approval for up to one year to allow the municipality to obtain the property.

USE OF AN OFFICIAL MAP

Article IV of the Pennsylvania Municipalities Planning Code (MPC) authorizes the use of an official map as a legal means for reserving a site(s) a municipality has designated for future public facilities. An official map may focus on one type of improvement, such as a street or parkland, or include a variety of public facilities. Development of land designated for public facilities on the official map may be delayed for up to one year from the time a proposal is submitted in order for a municipality to obtain the property. The adoption of an official map does not by itself establish a street, nor does it imply that the municipality has taken the land. That must be accomplished through a mutual agreement, municipal purchase, or condemnation of the land through eminent domain procedures.

The adoption of an official map does not by itself establish a street, nor does it imply that the municipality has taken the land. That must still be accomplished through a mutual agreement, municipal purchase, or condemnation of the land through eminent domain procedures. The designation of a “reverse frontage road” could be implemented through the Official Map process.

TRAFFIC MANAGEMENT

Traffic calming is the slowing or reduction of motor-vehicle traffic to improve safety for pedestrians and bicyclists, as well as other vehicles. Traffic calming measures are primarily used to address speeding and high cut-through traffic volumes on neighborhood streets. These issues can create an atmosphere in which non-motorists are intimidated or even endangered by motorized traffic. By addressing high speeds and cut-through volumes, traffic calming can increase both the real and perceived safety of pedestrians and bicyclists and improve the quality of life within the neighborhood.

The role of physical measures in traffic calming is usually emphasized because these measures are self-policing. In other words, by utilizing speed humps and/or traffic roundabouts, motorized vehicles will slow down in absence of a police presence. Some potential traffic calming measures include: speed humps; speed tables; chicanes; planted medians; roundabouts; and curb extensions.

In order to promote traffic calming, Plumstead Township has provided traffic calming guidelines in the subdivision and land development ordinance. However, the township should develop specific policies regarding traffic calming. These policies should include the participation of any

neighborhood that could be impacted by the addition of traffic calming measures. Some of the goals of a traffic calming program should include the following:

- Achieving safe, slow speeds for all vehicles;
- Improving the safety and the perception of safety for non-motorized users of local roads;
- Increasing roadway safety by reducing crash frequency and severity;
- Increasing the compatibility of all modes of transportation, specifically with pedestrians and bicyclists;
- Reducing cut-through vehicle traffic on local roads; and
- Reducing the need for traffic enforcement on local roads.

Traffic calming techniques should affect driver behavior and improve the safety of the street for all roadway users, including pedestrians and bicyclists. The techniques must be designed so they do not impede emergency access by police, fire, ambulance, or rescue personnel. Finally, allowing for public participation during the designing of traffic calming facilities will help to ensure acceptance of these facilities.

PUBLIC TRANSIT

The Southeastern Pennsylvania Transportation Authority (SEPTA) provides bus service along Route 611 in the southwest corner of the township. SEPTA's Route 55 bus provides public transportation service from the Olney Transportation Center in Philadelphia to the Cross Keys Shopping Center. The nearest commuter rail station, SEPTA's Lansdale/Doylestown Regional Rail Line Doylestown Station is located within minutes of the township in Doylestown Borough.

The Transportation Management Association of Bucks County (TMA Bucks) also provides fixed route bus service along Route 313, also in the southwest corner of the township. The service known as the *Doylestown rushbus*, provides fixed route service in and around the borough of Doylestown, with a stop at the Cross Keys Shopping Center. The Doylestown rushbus makes local stops throughout Doylestown and connects with SEPTA's Lansdale/Doylestown Regional Rail Line to Lansdale, Philadelphia and Paoli, as well as the Route 55 bus to Willow Grove and Olney. Unfortunately for the township, the population density in the rest of the township does not allow fixed route bus service from SEPTA to be a feasible option at this point.

Another form of public transportation available to Plumstead residents is available from Bucks County Transport, Inc. (BCT). BCT is a private, nonprofit transportation agency, which provides on-demand services to those over 65 years of age or those on medical assistance. The township should also support any additional service expansion which would help the older members of the community and/or transit dependent residents.

TRAILS, PEDESTRIANS, AND BICYCLING FACILITIES

The opportunity to travel by foot and bicycle is important for both recreational purposes and for members of the community who do not drive. These modes of transportation also provide an alternative to the automobile. As the mandates of the Federal Clean Air Act are carried out, provisions for pedestrian and bicycle access in the suburbs will become increasingly important for future community planning. In keeping with trends over the past decade, federal funding for new highways and roads will most likely diminish. SAFETEA-LU provides a different focus for transportation planning. Federal legislation now places new emphasis on alternatives to dependence on motor vehicles, and less attention is given to new highways and roads.

Providing a walkable environment is essential to efficient transportation. Every trip begins and ends with walking. Walking remains the cheapest form of transportation for all people, and the construction of a walkable community provides the most affordable transportation system any community can plan, design, construct, and maintain. Walkable communities are more sustainable and lead to more social interaction, physical fitness, and diminished crime and other social problems. Walkable communities are typically more livable communities and can lead to whole, happy, healthy lives for the people who live in them.

Through the provisions of the subdivision and land development ordinance, the township is able to ensure new developments, both residential and nonresidential, are provided with sidewalks. Sidewalks will provide alternative methods to make certain needed trips, in addition to their use for exercise and recreation. It is important that sidewalks be provided in the higher density residential zoning districts and in nonresidential areas where walking should be encouraged as an alternative to the use of the automobile. Sidewalks should be provided on both sides of existing and proposed streets. There should be compelling reasons for the waiver of the sidewalk standards of the ordinance.

Bicycle and pedestrian systems are important and much appreciated community facilities. The township has recognized their importance and has prepared a Greenway and Trail Plan. This plan recommends that the township develop a Township Bicycle Plan. Further details on bicycle and pedestrian facilities can be found in the Open Space and Recreational Resources chapter of this plan.

SUMMARY

Plumstead contains a network of local streets and arterial and collector roads. Currently, the township experiences traffic congestion and high volumes of traffic at several intersections, particularly during rush hours. An effective and efficient multi-modal transportation system is critical if Plumstead Township is to continue to thrive as a desirable place to live and work.

Recognizing congestion reduction and promotion of alternative means of travel as concerns, Plumstead should look toward the future by developing a context sensitive program that promotes the maintenance and improvement of the existing network. Additional policies should encourage employee ridesharing, transportation management associations, promote walking and bicycling, traffic calming, access management and advocate mass transit by providing and/or expanding park and ride facilities.

SUMMARY OF RECOMMENDATIONS

The following recommendations will help Plumstead address mobility:

- Incorporate land use considerations into transportation planning and ensure that transportation facilities have adequate capacity to meet demand.
- Work with Bucks County Planning Commission to develop list of transportation projects for County Transportation Improvement Program (CIP).
- Encourage traffic calming in new developments (when appropriate).
- Preserve and create rights-of-way for trails and pedestrian use.
- Develop township Bicycle Plan.
- Encourage walking by requiring sidewalks or bike/hike paths as part of all new developments.
- Develop an Access Management Plan.
- Investigate the possibility of using the Official Map provisions of the Municipalities Planning Code to support access management initiatives.
- Support additional public transportation service expansions, especially those which would help older members of the community.
- Develop specific policies regarding traffic calming.
- Use a context sensitive design approach as roadways and bridges in the township are being considered for reconstruction or replacement.



Chapter 3

Natural Environment and Natural Systems

Natural resources serve to help maintain the character of a place and enhance the quality of life in a community. Resources such as geology, soils, forests, waterways, floodplains, wetlands, topography, and vegetation are natural elements that define an area. Understanding their importance is crucial to help guide land use planning and future development and can provide the framework within which more informed decisions can be made regarding the accommodation of community needs.

The township has placed great importance on protecting valuable natural resources. In 2006, the Plumstead Township Environmental Advisory Council and the Natural Lands Trust completed the *Plumstead Township Environmental Resource Inventory*. This document has been instrumental in identifying important environmental resources in the township, assessing the level of threat such resources face from development, and providing recommendations for their protection. In addition, the Inventory discusses “Habitat Conservation Networks” and the importance of maintaining the area’s natural diversity, also referred to as local biodiversity. This Comprehensive Plan recommends the implementation of recommendations in the *Environmental Resources Inventory* as appropriate. In May of 2010, the township adopted their updated *Open Space Plan* which supports these recommendations.

This chapter provides an overview of the regulatory authority of resources, identifies important natural features and resources within the township along with recommended actions to protect and enhance these resources, and lists opportunities and strategies to promote natural resource protection. The township’s natural features and resources have been divided into land resources and hydrological resources.

REGULATORY AUTHORITY

There are state and federal regulations designated to protect many of Pennsylvania’s natural resources. Some of these regulations, such as those pertaining to wetlands protection, establish minimum protection standards that must be adopted by local government zoning ordinances. However, not all natural resources are protected by state or federal law.

The basis for local protection of natural resources is found in the Commonwealth's Constitution, in judicial decisions and in the Pennsylvania Municipalities Planning Code (MPC). In 1968, the Constitution was amended to state in Article 1, Section 27:

"The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and aesthetic values of the environment. Pennsylvania's public natural resources are common property of all people, including generations yet to come."

The MPC charges local governing bodies with the responsibility for protecting citizens' health, safety, and welfare through comprehensive planning and land use regulation.

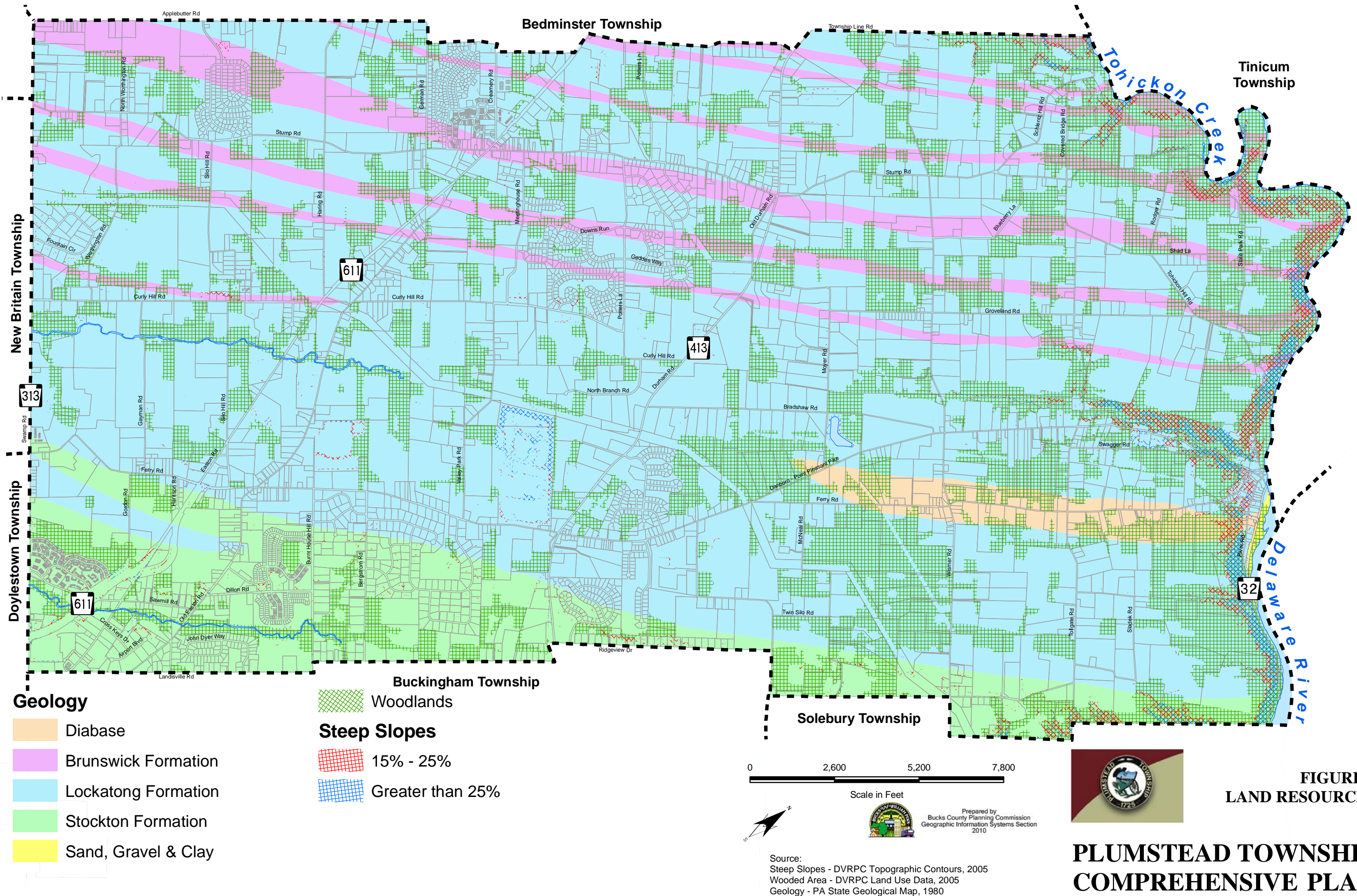
LAND RESOURCES (FIGURE 4)

GEOLOGY

The geology of an area largely impacts future planning and land use decisions through impacts on water supply, topography, and soil characteristics. The geologic formations of Plumstead Township are part of the Newark Basin portion of the Triassic Lowland Province, a broad basin within the Northern Piedmont, which contains sedimentary shale bedrock geology (Stockton, Brunswick and Lockatong formations). The township also encompasses the eastern portion of a broad area of igneous (i.e. volcanic) diabase bedrock intrusions. These formations occur in narrow bands extending from the southwest to the northeast, following the shape and angle of the township's boundaries. Each geologic formation has its own characteristics as described below:

Stockton Formation – This formation underlies the southern and eastern boundaries of the township along Pine Run and the Paunacussing Creek. This bedrock is especially porous and recharges groundwater efficiently, with the highest average permeability of any aquifer in Bucks County. Wells drilled in this formation can typically yield up to 500 gallons per minute. This formation is characterized by reddish-brown sandstones, also containing conglomerates, shale and mudstone. The rock outcrops along Fleecydale Road near the lower Paunacussing Creek provide a clear cross section of the sedimentary nature of these shales. The Stockton Formation is an important location for rare plants identified in the *Natural Areas Inventory of Bucks County* (1999) which is discussed later in this chapter.

Brunswick Formation – This sedimentary rock is located in bands interlaced with Lockatong geology across the northwestern portion of the township. It consists mostly of red to reddish-brown and gray to greenish-gray siltstone and mudstone. This formation is a nonporous rock that is moderately resistant to erosion and weathering. Groundwater within the Brunswick formation flows



primarily through fractures and closely spaced joints in the siltstone and shale. This formation is generally considered a reliable source of groundwater.

Lockatong Formation – This is the predominant geologic formation underlying Plumstead Township. It consists mostly of gray to black argillite and fine-grained, tightly-cemented sediment. This rock type is moderately resistant to erosion and weathering and because it is not very porous, is considered a less reliable source of groundwater. Storage areas within the rock fractures are generally small and often obstructed by a dense clay-like soil that fills joints and prevents water flow. The aquifer in this bedrock has limited capacity, with private wells yielding only in the range of 10 gallons per minute.

The Lockatong Hornfels formation is a type of “baked” shale occurring in a wider band surrounding the diabase, located primarily on the south side of Point Pleasant Pike and the south side of Ferry Road. Hornfels is a denser, crystalline, metamorphic rock type formed when molten rock was pushed into cracks and fissures in the Lockatong shale causing extreme heating of the adjacent rock. An example of Lockatong Hornfels formations is the old quarry on Point Pleasant Pike near the village of Point Pleasant.

Diabase – A very hard rock found in a narrow band in the eastern portion of the township, paralleling Ferry Road in the vicinity of Hickory Creek, extending from Point Pleasant Pike to the Delaware River. Prominent wooded ridges, steep slopes and large boulders that run along Hickory Creek just south of Ferry Road, are attributed to the presence of diabase bedrock. The igneous (formed by molten rock) nature of diabase rock creates its physical characteristics of dense, crystalline, erosion-resistant outcrops that form large boulders.

Diabase is susceptible to weathering into large boulders and thin soils which present limitations for construction and maintenance of in-ground septic systems, as compared to softer, sedimentary shales or limestone. The diabase formation underlying the vicinity of Hickory Creek is deemed a poor source of groundwater, with the majority of groundwater only available within the weathered zone to 30 feet deep. Most of the underlying geology is too dense and the fractures and fissures too narrow to provide reliable well water on a large scale.

Sand, Gravel & Clay Deposits – A very small area between the canal and the river in the area of Point Pleasant contains sand, gravel and clay deposited by glaciers that bear no geologic relationship to the underlying bedrock. These deposits are typical of floodplain areas along much of the Delaware River in Bucks County. Because of their unconsolidated and highly permeable nature, they produce high water yields. However, this trait also makes them vulnerable to groundwater contamination.

A clean, plentiful source of water is crucial to the quality of life and the economic prosperity of a community. Under natural conditions, there is a balance between the volume of water entering or

recharging an aquifer and the volume of water being discharged from an aquifer. Protecting the environment and water resources requires consideration of the entire water cycle. Water supply and methods of protection will be discussed more thoroughly in the Community Facilities chapter.

SOILS

The soils within a region are important in land use planning because they directly influence the level of agricultural production, stormwater runoff, and the amount and intensity of development that may occur on a given site depending on the underlying soil characteristics and sewage disposal methods. Soils are also critical components of water quality due to their varying capacities for filtering pollutants generated by human activities such as land developments, the use of septic systems and fertilizer applications. Soil limitations need to be considered when construction is proposed in areas with wet soils, shallow water tables, or shallow depth to bedrock.

The soils in Plumstead Township have formed over thousands of years from a combination of weathering shale and sandstone parent material and decomposing organic matter from deciduous forests. These are generally moderate to poorly drained soils with shallow depth to bedrock and occur in three main soil associations: Abbottstown-Doylestown-Reaville; Towhee-Neshaminy-Mount Lucas; and Lansdale-Lawrenceville.

Abbottstown-Doylestown-Reaville soils occur over the Lockatong Formation, and are the most common soil type in the township. A smaller percentage of Reaville, Readington, Bedinton, Klinesville and Penn soils are also included in this series. The limitation of this soil series includes a high water table, restricted permeability, and shallow depth to bedrock.

Towhee-Neshaminy-Mount Lucas soils occur over the diabase and Lockatong Hornfels formations along hilltops, ridges and lower slopes between Hickory Run and Geddes Run. These soils tend to be stony or have large boulders close to the surface, and are poorly drained, with a high water table, often from fall through spring.

Lansdale-Lawrenceville soils are found over the Stockton formation along the Paunacussing Creek and Pine Run along the southeastern boundary of the township. These are deep, moderately well-drained, silty soils on relatively level ground which generally formed over loamy and silty shale and sandstone parent material of the Lockatong Formation. They extend in a wide band from the Montgomery County line eastward to the Delaware River in Plumstead.

AGRICULTURAL SOILS

The agricultural capability of Plumstead's soils varies from one section of the township to another with some areas of prime agricultural soils and areas with soils of statewide importance supporting a substantial and successful farming industry in the township. The Natural Resource Conservation Service (NRCS), formerly the U.S. Soil Conservation Service, provides a classification system for the

identification of important agricultural soils. Further discussion on agricultural soils and agricultural preservation can be found in Chapter 4 Open Space and Conservation Planning.

TOPOGRAPHY

The topography of a region has a major influence on land use patterns, stormwater runoff, and soil erodibility. Development on steep slopes accelerates erosion by removing or disturbing the established groundcover and topsoil. Removal of the vegetation destroys the groundcover that absorbs rainwater, anchors soil, and buffers or dissipates the impact of rainfall on topsoil. Erosion produces sediment that pollutes surface water. Over time, accumulated sediments narrow stream channels and fill in pond and lake bottoms. This process restricts the capacity of waterways to handle flood flows and increases the incidence and severity of flooding.

Plumstead Township has three topographically different regions: the floodplain of the Delaware River; the steep and wooded slopes along the streams flowing to the Delaware River; and the rolling uplands of the Piedmont Plateau. The highest point in the township, at 642 feet above sea level, is located just north of Route 313 and Stump Road near Griers Corner; the lowest point in the township, at approximately 90 feet above sea level, is at the Delaware River near Lumberville. Much of the township is gently rolling hillsides averaging 350 to 400 feet above sea level. Steeply sloping areas are located along the lower stream valleys and just above the Delaware River. The location of steep slopes of 15 percent and greater is identified on Figure 4, Land Resources.

The Plumstead Township Zoning Ordinance includes the following regulations protecting contiguous areas of steep slopes exceeding 3,000 square feet: 70 percent protection for slopes of 15 to 25 percent; and, 85 percent protection for slopes of 26 percent or steeper.

The protection standards in the zoning ordinance are appropriate as currently structured. Limiting construction, regrading and the amount of impervious surfaces allowed on steep slopes will greatly reduce the adverse environmental impacts of new development.

WOODLANDS

Woodland resources provide numerous benefits. They support wildlife as habitat, provide recreational opportunities and have significant aesthetic value. They also moderate environmental conditions by anchoring soil and reducing erosion and sedimentation, and by providing shade to lower water temperature in streams which helps to maintain aquatic life. The vegetative cover softens the impact of falling rainwater, enables groundwater recharge and reduces the volume and rate of runoff. Additionally, woodlands provide visual and sound buffering and play a role in filtering air pollutants.

Wooded areas are scattered throughout Plumstead with the bulk of woodlands located in the eastern portion of the township along streams and steep slopes of the tributary creeks and in areas

which have not been cleared for farming. Woodland areas within Plumstead Township are shown on Figure 4, Land Resources.

The township currently regulates forest resources by restricting removal of trees depending upon the applicable zoning district of a site. In the RP, RO, R-1, R-2, R-3, R-4, VR and MHP districts, no more than 20 percent of forested areas may be graded, cleared, or altered. In the C-1, C-2, C-3, R-5, VC, LI, and Q districts, no more than 40 percent of such areas shall be altered.

In addition, the township contains regulations for the preservation of mature trees located outside of a woodland area. Natural resource protection standards in the zoning ordinance require that trees having a diameter of 24 inches or greater which are located outside of a forest area shall be limited to the same forest removal requirements based on the site's zoning district.

In February of 2008, the township amended the zoning ordinance to incorporate replacement tree and reforestation/afforestation regulations. The regulations require replacement of trees having a diameter of six inches or more that are removed or destroyed as a result of a subdivision or land development. Also, the regulations specify a minimum percentage of a site that must be afforested based on the zoning district of a site.

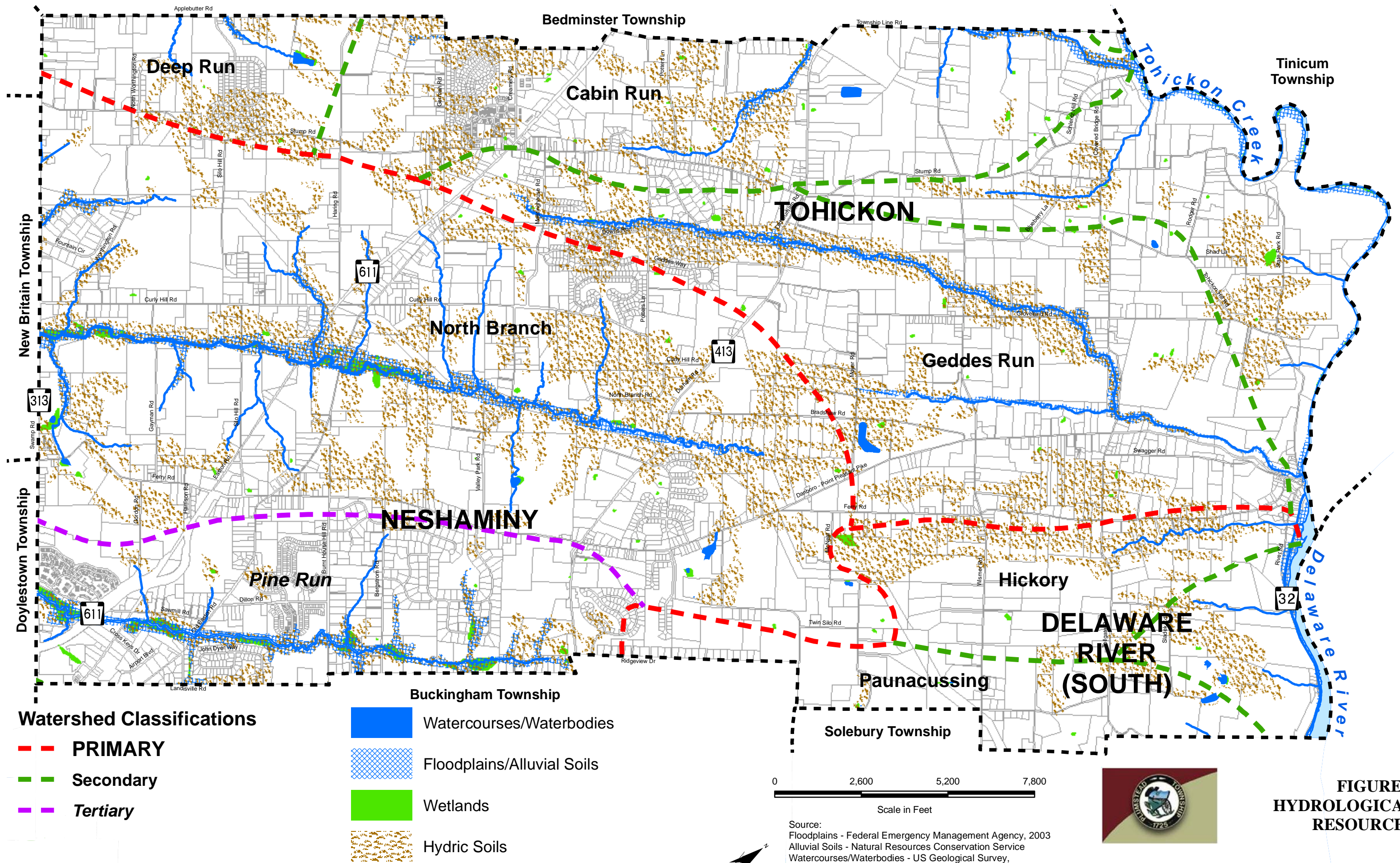
HYDROLOGIC RESOURCES (FIGURE 5)

WATERSHEDS/WATERWAYS

A watershed includes all of the land and waterways that drain into the same main body of water. The topography of an area determines watershed boundaries. While all of Plumstead Township ultimately drains to the Delaware River, the township falls within three primary watersheds: the Tohickon Creek Watershed; the Neshaminy Creek Watershed; and, the Delaware River (South) Watershed. The watersheds within the township are shown on Figure 5, Hydrological Resources.

Originating in the northern portion of Bucks County, the Tohickon Creek Watershed drains approximately 108 square miles, 11.8 square miles of which are located within Plumstead Township. The Tohickon Creek eventually discharges into the Delaware River at Point Pleasant. Secondary watersheds within the Tohickon Creek Watershed include Deep Run, Cabin Run, Geddes Run, and the main stem of the Tohickon Creek.

The total watershed drainage area of the Neshaminy Creek is 176 square miles, of which approximately 12 square miles are located within Plumstead Township. Within Plumstead Township, the secondary watershed within the Neshaminy Creek Watershed is the North Branch of the Neshaminy Creek, the headwaters of which originate within the township. The Neshaminy Creek Watershed also contains the Pine Run tertiary watershed.



**FIGURE 5
HYDROLOGICAL
RESOURCES**

**PLUMSTEAD TOWNSHIP
COMPREHENSIVE PLAN**

Of the 134 square miles directly draining to the Delaware River (South) Watershed, approximately 3½ square miles are located within Plumstead Township. Secondary watersheds that drain directly into the Delaware River Watershed include the Paunacussing and the Hickory watersheds.

According to the township's *Environmental Resources Inventory*, the township contains a total of approximately 50 miles of mapped streams and tributaries, approximately 37 of which are first or second order streams. First order streams are the smallest tributaries in a watershed and when merged with another first order stream create a second order stream. Vegetation found naturally within stream corridors enhances biodiversity by supporting a variety of flora and fauna unique to the habitat. The retention of vegetation adjacent to first order streams is important to help keep sediment and pollutants out of the streams lower reaches. The headwaters areas are small watersheds which contain the place from which the water in a stream or river originates. When properly maintained, first order streams and headwaters provide the greatest potential for protecting the quality and quantity of the entire watershed. Providing protection standards for these areas within the township are important for the health of stream and river ecosystems.

The Pennsylvania Department of Environmental Protection (PADEP) has established five stream-quality designations. In order of increasing water quality standards the stream quality classifications include: Warm Water Fishes (WWF), Cold Water Fishes (CWF), Trout Stocked Fishes (TSF), High Quality-Cold Water Fishes (HQ-CWF), and Exceptional Value (EV). Protected use designations for streams in Plumstead Township, established by the PADEP are listed below. While the Paunacussing Creek is not physically within Plumstead Township boundaries, the watershed for the creek extends into the southeastern portion of the township.

Paunacussing Creek – High Quality-Cold Water Fishes (HQ-CWF)

Tohickon Creek – Cold Water Fishes (CWF)

Hickory Creek – Trout Stocking Fishes (TSF)

Unnamed tributaries of the Delaware – Trout Stocking Fishes (TSF)

Pine Run (Neshaminy) – Trout Stocking Fishes-Migratory Fishes (TSF-MF)

North Branch Neshaminy – Warm Water Fishes (WWF)

Streams that receive the designation of High-Quality are provided with a measure of protection against uses and activities that would degrade the water quality of the stream. Any uses and activities that would degrade stream quality may be denied a permit.

As part of the water quality standards program, PADEP conducts stream use designation evaluations. Redesignation evaluations may also be conducted at the request of the Pennsylvania Fish and Boat Commission (PFBC), any person, agency, group, organization, municipality, or industry who submits a rulemaking petition to the Environmental Quality Board (EQB). Designations are not static and changes can occur based, for example, upon development pressures or nonpoint and

point source pollutants entering a water body. In April 2000, the Tinicum Conservancy petitioned to the PADEP for redesignation consideration of the Tohickon Creek from High Quality (HQ) designation to Exceptional Value (EV) designation; the highest classification by the PADEP. Approval of this redesignation was still pending at the time of this publication.

DELAWARE RIVER MANAGEMENT AREA OVERLAY DISTRICT

In accordance with Plumstead Township's support of the *Lower Delaware River Wild and Scenic River Management Plan* (1997), the Delaware River Management Area Overlay District was adopted as part of the township zoning ordinance. The boundary of the overlay district is defined as the area at an elevation of 400 feet, as identified by the United States Geological Survey (USGS), and all lower elevations extending towards the Delaware River and its tributary waterways.¹⁵ This overlay district provides resource protection standards in addition to those protections standards required in the underlying zoning districts—RO, Rural Residential and RP, Resource Protection districts. Over the last decade, township officials have amended various resource protection standards. Based upon an examination of these protection standards, it appears there is a need to examine how these standards are collectively applied. For instance, based upon a review of these standards, it appears that the Delaware River Management Area Overlay District regulations are similar or possibly less stringent than the RP district regulations.¹⁶

For instance, the River Overlay District could be amended to provide more stringent regulations than what currently existing, such as prohibiting any disturbances on slopes of 26 percent or greater. Currently, the Natural Resource Protection Standards permit a maximum of 15 percent intrusion throughout the township. This heightened protection will function to reduce erosion and sedimentation from extremely steep slopes to the adjacent waterways, which would be consistent with the purpose and intent of the *Lower Delaware River Wild and Scenic River Management Plan* as well as the township's environmental protection policies. Therefore, township official will re-examine the purpose and intent of the River Overlay District when used in tandem with the RP district (and possibly RO district) to determine appropriate protection standards.

¹⁵ The Delaware River Management Area Overlay District shall not extend into the VC, Village Center District or the Q, Quarry District within the Delaware River Management Area.

¹⁶ Within the Delaware River Management Area Overlay District, Use E1 (Utilities) shall not exceed a height of 35 feet. Towers, switching stations, pumping stations, public water facilities, or sewage treatment plants are not permitted. Within the RP, Resource Protection district (Section 27-404, Additional Regulations), Use E1 (Utilities) shall not exceed a height of 35 feet; and towers, switching stations, pumping stations, public water supply facilities, community sewage systems, municipal public sewage systems, community sewage treatment plants, and small-flow treatment plants are prohibited. The RP district also restricts any disturbance of 100 percent protection resources (i.e., floodplains/floodplain soils, streams, watercourses, Waters of the Commonwealth, Waters of the U.S., lakes or ponds, wetlands), including road or utility crossings. A variance would be required under these circumstances.

Section 27-2403 of the zoning ordinance requires that the Delaware River Management Area Overlay District include a boundary defined as the area at an elevation of 400 feet, as identified by United States Geological Survey (USGS), and all lower elevations extending towards the Delaware River and its tributary waterways. Due to the availability and accuracy of other contour data sources, using USGS contour data antiquated and should be replaced. To provide a current and definitive contour data source, township officials will amend the zoning ordinance and zoning map to reference Pennsylvania Department of Conservation and Natural Resources (DCNR) PAMAP Program for defining the Delaware River Management Area Overlay District.¹⁷

RIPARIAN BUFFERS

Plumstead Township has been proactive in efforts to protect the township's streams with the incorporation of riparian buffer zone regulations within the zoning ordinance. Designed to protect all watercourses within the township, the riparian buffer, which extends 95 feet outward from the top-of-bank of the watercourse, must remain undisturbed and permanently protected. This requirement is applicable to new subdivisions and developments in the township.

The township standard is broader than the minimum 75-foot buffer recommended in the *Plumstead Township Hydric Soil Study* conducted by Princeton Hydro, however, it is smaller than that currently recommended by the Pennsylvania Department of Environmental Protection (PADEP). The state promotes a riparian forest buffer comprised of two zones which would apply to perennial or intermittent streams, rivers, lakes, ponds, and reservoirs. In PADEP's document *Riparian Forest Buffer Guidance* (2009), the state recommends a total width of one hundred feet as the average minimum riparian forest buffer width. Consideration should be given to incorporating riparian buffer standards consistent with the state's current recommendations.

The Plumstead Township *Environmental Resource Inventory* recommends that the township protect the widest riparian buffers possible by prioritizing streamfront parcels for protection. The Inventory provides a number of recommendations which include educating streamfront owners about the benefits of protecting and restoring native riparian vegetation along stream banks rather than mowing up to the edge of the stream. This is particularly important for headwater areas and first order streams which are particularly vulnerable to pollution and degradation. Also, the Inventory recommends that a program be developed to survey and map the township's riparian buffers, and set goals such as achieving streambank fencing in all parts of the township with livestock, and reforestation 50 percent of the corridors where riparian buffers are missing. This comprehensive plan supports the recommendations outlined in the *Environmental Resource Inventory*.

¹⁷ This dataset, produced by the State's Department of Conservation and Environmental Resources (DCNR) PAMAP Program, consists of topographic contours mapped at an interval of 2 feet. Contours were derived from a bare-earth digital elevation model constructed from PAMAP LiDAR (Light Detection and Ranging) elevation points.

LAKES AND PONDS

Lakes and ponds function in a similar manner to streams and other hydrologic features. Whether natural or man-made, lakes and ponds moderate stream flow during storms and flood events and play an important role in oxygen and nitrogen cycles. In addition to providing habitat and water sources for aquatic and wildlife, these landscape features are scenic and recreational amenities.

While Plumstead does not contain any lakes, the township does contain a few farm ponds. The township zoning ordinance contains a natural resource protection standard of 100 percent for such water bodies. Alteration, grading, developing, filling, piping or diverting of lakes and ponds are prohibited except for roads and utilities if approved by all regulatory agencies when no other access to the site is available.

FLOODPLAINS

Floodplains are relatively flat or low-lying areas adjacent to surface waters where flooding has occurred in the past and will likely occur in the future. During periods of heavy rains and high stream flow, floodplains provide temporary storage for floodwaters, reducing flooding threats to adjacent areas and providing a slower, more consistent flow of water. Some floodplain areas absorb and store large amounts of water and become a source of aquifer recharge.

Plumstead Township participates in the National Flood Insurance Program (NFIP), which is designed to reduce flood hazards by regulating activities in the floodplain. The NFIP is a result of a policy shift away from structural flow control solutions such as dams to a more comprehensive floodplain management approach, such as limiting building activities within floodplain areas. Compliance with the minimum requirements of the NFIP, through adoption and enforcement of floodplain management ordinances, enables township residents and businesses to purchase federally-backed flood insurance.

The floodplain areas mapped and regulated by the NFIP in Plumstead Township are located along the Delaware River, Tohickon Creek, Geddes Run, Geddes Run Tributary, the North Branch of the Neshaminy Creek, Cabin Run, and Pine Run Creek. The zoning ordinance contains a floodplain overlay zone that applies to all lands within the township that are located within the boundaries of the designated Floodplain District as identified in the Flood Insurance Study (FIS) from Federal Emergency Management Agencies (FEMA). Floodplains currently require 100 percent protection for areas within the 100-year floodplain and for areas containing floodplain soils with the exception of certain specified utilities and public facilities and improvements. Floodplains and areas containing floodplain soils are located throughout the township and are identified on Figure 5, Hydrological Resources.

Floodplain or alluvial soils indicate where flooding has occurred in the past and where floodwaters have deposited sediment. Based on the potential for flooding, these soils are considered unsuitable for most types of development. On development sites, where a watercourse, stream, pond or lake is not identified in the Flood Insurance Study by calculated flood elevation, the zoning ordinance requires the applicant to determine the floodplain with hydrologic and hydraulic engineering techniques.

An area of the township that has experienced flooding in the past is within the Pine Run tertiary watershed, particularly in the area around Dyerstown. Given this historic flooding problem, future development should not only be sensitive to floodplain boundaries but consideration should be given to providing additional setbacks from the boundary of delineated floodplains so as to afford extra protection for this vulnerable area.

The current minimum standards should be retained to restrict development within the 100-year floodplain and within areas containing floodplain soils.

WETLANDS

Wetlands are undrained, saturated soils that support wetland vegetation where the water table is at or near the surface or where shallow water covers the area due to permanent or seasonal inundation of surface or groundwater. Typically, wetlands occur as marshes, swamps, and bogs. Wetlands are identified on Figure 5, Hydrological Resources. It is noted that the mapped wetlands on the Hydrological Resources map are based on information from the National Wetlands Inventory maps and do not show all of the wetlands that may exist within the township.

Wetlands provide numerous ecological benefits which makes the protection of this resource important. Wetlands play a key role in maintaining and improving water quality by filtering out chemical and organic wastes, and by providing groundwater recharge. They store water during storms and floods, thereby reducing hazards to life and property, and are important habitats for many threatened or endangered plants and animals.

At the federal and state levels, wetlands are regulated by the U.S. Army Corps of Engineers and the Pennsylvania Department of Environmental Protection (PADEP) by authority of the Federal Clean Water Act and various state laws. The Corps requires a permit to disturb wetlands greater than one acre. State and/or federal agencies that permit wetlands disturbance may require that the loss of wetlands be mitigated by the creation of wetland areas elsewhere. The PADEP also regulates wetlands under Chapter 105 Rules and Regulations administered by the Bureau of Dams and Waterways Management.

Locally, the Plumstead Township zoning ordinance requires 100 percent protection of wetlands. In addition, for wetlands consisting of 5,000 square feet or greater, the township's natural resource

protection standards require a wetlands margin extending from the wetland to the limit of hydric soils or 75 feet, whichever is greater. This wetlands margin is also afforded a protection ratio of 100 percent and must remain undisturbed.

HYDRIC SOILS

An initial indicator of wetlands is the presence of hydric soils. Hydric soils are poorly drained, seasonal wet soils typically found in stream valleys, forested wetlands, and other low-lying areas and depressions. Hydric soils are highly sensitive to land disturbances and unsuitable for most development as they are generally not well-suited to support structures. An extensive network of hydric soils is located in Plumstead, with the broadest band extending through the center of the township paralleling the North Branch of the Neshaminy Creek, Geddes Run and Hickory Run. The zoning ordinance lists hydric soils as one of three defining parameters of wetlands.

While the zoning ordinance refers to hydric soils within the regulations for wetlands and wetlands margin, the ordinance does not provide a definition of hydric soils. In 2002, the Natural Resource Conservation Service (NRCS) issued a comprehensive new soils survey with new soil classifications. The zoning ordinance should be revised to incorporate a definition of hydric soils utilizing the most recent updated soils information from the Natural Resource Conservation Service (NRCS).

BIODIVERSITY

Biodiversity refers to the relationships among living things, as well as the relationships between living things and their environments. Habitat loss and alteration of resources are the most significant threats to biodiversity and are responsible for the decline in numbers of wild animals and plants. Traditional suburban development is especially destructive to natural habitats, fragmenting once contiguous areas of open space into marginal pieces of “leftover” land.

Bucks County contains a diversity of unique natural features. These natural features contain a wide range of flora and fauna, some of which are not found anywhere else in the Commonwealth. In 1999, an inventory was performed to identify and rank the most significant natural areas remaining in the county. This survey, titled *Natural Areas Inventory of Bucks County, Pennsylvania (1999)*, was conducted by the Morris Arboretum of the University of Pennsylvania (Ann F. Rhoads and Timothy A. Block) for the Bucks County Commissioners, to provide guidance for implementation of the natural areas protection component of the Bucks County Open Space Program.

While the 1999 inventory identified specific sites worthy of preservation, *Bucks County, Pennsylvania Natural Areas Inventory Update (2011)* takes a slightly different approach by focusing on broader geographical areas which include many of the individual sites previously recognized. By recommending protection and preservation of these broader areas, referred to as Proposed

Conservation Landscapes, the plan aims to protect sustainable natural communities or ecosystems by promoting connectivity of sensitive areas rather than focusing on individual sites.

Based on the *Natural Areas Inventory Update*, Plumstead Township contains the following three Proposed Conservation Landscapes:

- Lower Tohickon Conservation Landscape which extends into the northern area of the township, bordering Bedminster and Tinicum.
- Paunacussing Creek Conservation Landscape where it extends into the eastern portion of the township adjacent to Buckingham and Solebury townships.
- Neshaminy Creek Conservation Landscape where it extends into the western portion of the township adjacent to Peace Valley Park.

According to the 1999 plan, “meaningful protection of natural biological diversity, including rare species and their habitats, depends on maintaining functioning ecosystems that have long term sustainability.” To that end, it is important for municipalities to look beyond parcel and municipal boundaries to protect interconnected corridors of habitat.

These identified areas should be shown on future subdivision and land development plans (where applicable) to help protect and mitigate impacts on these important local resources. In addition, these proposed conservation landscapes should be considered while moving forward with township open space preservation efforts.

OPPORTUNITIES AND STRATEGIES TO PROMOTE RESOURCE PROTECTION

ENVIRONMENTAL ADVISORY COUNCIL (EAC)

One of the most effective strategies or methods a municipality can utilize to protect natural resources is to create a local Environmental Advisory Council (EAC). Plumstead Township has an EAC consisting of five volunteer citizens appointed by the Board of Supervisors. The stated purpose of the township’s EAC is “to advise the township Board of Supervisors on matters dealing with protection, conservation, management and use of natural resources, including air, land and water resources located within the limits of Plumstead Township, to assist in the ongoing efforts of the Board of Supervisors to preserve open space within the township, and to help educate residents of Plumstead about the importance of environmental protection.”

Environmental issues that the township’s EAC focuses on include habitat protection, streambank restoration, stormwater management, biodiversity conservation, and protection of groundwater and other natural resources. The EAC is charged with subdivision and land development review, ordinance review, site contamination investigations, educational activities, land preservation, and environmental planning. The Council was instrumental in the development of the township’s

Environmental Resource Inventory (ERI) and is a strong advocate for environmental preservation and conservation. The expertise of the EAC should continue to be utilized.

GROWING GREENER ORDINANCE ASSESSMENT

In 2007, the Natural Lands Trust (NLT) conducted an assessment of Plumstead Township's land use documents which focused on land preservation and natural resource conservation. Based upon the principles of the *Growing Greener: Conservation by Design* program developed by the NLT, the assessment provided recommendations on how township ordinances could be modified to improve open space preservation and conservation of natural resources.

Some of the primary suggestions relating to protection of natural resources include: requiring applicants to submit a context map showing major resources mapped on an aerial photo of the development site; requiring submission of an Existing Resources/Site Analysis Plan (ER/SA) that shows primary natural features from the Context Map and secondary conservation features as prioritized by the township; requiring site visits by Planning Commission members and other township officials; and requiring a four-step design process by which site design is dictated by the best location for open space and preservation of existing natural resources.

Township officials should review the recommendations from the Growing Greener Ordinance Assessment and determine which ones have merit for implementation.

PENNSYLVANIA RIVERS CONSERVATION PLANS

The Pennsylvania Rivers Conservation Program, administered by the Bureau of Recreation and Conservation of the Pennsylvania Department of Conservation and Natural Resources (DCNR), was developed to conserve and enhance river resources through preparation and accomplishment of locally initiated conservation plans. The purpose of these plans is to provide a comprehensive intermunicipal approach to improving, conserving, and making better use of river resources and surrounding land. The overall program provides technical and financial assistance to municipalities and river support groups to carry out planning, implementation, acquisition, and development activities.

The four river conservation plans that pertain to Plumstead are: *The Lower Tohickon Creek Watershed Conservation Plan* (2002), the *Upper/Middle Neshaminy Creek Watershed Conservation Plan* (2003), the *Middle Delaware River Conservation Plan* (2004), and the *Paunacussing Creek Watershed Conservation Plan* (2005). Each plan provides general recommendations pertaining to watersheds and land conservation. Recommendations from the plans should be implemented where applicable.

The Pennsylvania Rivers Conservation Registry promotes river conservation and recognizes rivers or river segments in communities that have completed river (*or watershed*) conservation plans. The

registry also is a means to endorse local initiatives by combining them in a statewide recognition program.

In order for a river to be placed on the registry it must have an approved plan and local municipal support. Registry status must be achieved to qualify for implementation, development or acquisition grants. With the adopted rivers conservation plans, municipalities are eligible for DCNR funding under the Community Conservation partnership, Rivers Conservation Program, for certain acquisition and development projects on a 50-50 cost-sharing basis. Funding under this program may be able to benefit the township for pertinent projects when determined feasible.

HIGHLANDS CONSERVATION ACT

Plumstead Township is within an area known as the Highlands. Extending from Pennsylvania's border with Maryland through New Jersey and New York to Connecticut's border with Massachusetts, the Highlands encompass more than three million acres of primarily forested lands. It is estimated that this vast forest region provides drinking water for more than 11 million people. Described as a greenbelt near some of the country's largest metropolitan areas, the Highlands Region connects to the Appalachian Mountains and the 2,174-mile-long Appalachian National Scenic Trail.

The Highlands Conservation Act, passed into law in 2004, is the authorizing legislation allowing for the expenditure of funds that will be available to states for the preservation of Highlands areas. While the measure authorizes \$10 million a year over a 10-year period, funding must be appropriated yearly.

The first allocation of funding from this program within Bucks County was announced in 2009. An amount of \$700,000 was allocated for the Cooks Creek Watershed Conservation Project in upper Bucks County to help support conservation and land acquisition efforts. In addition to providing a mechanism for natural resource protection, this legislation may also provide the township with an additional tool for open space preservation.

LOW IMPACT DEVELOPMENT

Although the zoning ordinance requires that proposed development comply with natural resource protection standards, additional tools can enhance resource protection on an individual site basis. Low Impact Development or LID, is an approach that uses various land planning and design practices and technologies to conserve and protect environmental resources. The concept focuses on maintaining and conserving natural systems and hydrologic functions on a site in order to reduce the need for future mitigation.

LID stresses the minimization of development impacts and site disturbances such as grading and tree removal and favors the preservation and utilization of a site's natural drainage patterns. This

strategy is aimed at preserving open space, minimizing land disturbance, protecting natural systems (such as vegetation, soils, environmentally sensitive areas), and incorporating natural site elements (such as wetlands and stream corridors) as design features.

When it comes to the design of stormwater management systems, the traditional philosophy was to collect, convey, and remove water from the site as quickly as possible. The LID philosophy encourages designers to think about ways to treat stormwater as close to the source as possible, such as providing biofiltration or infiltration areas, vegetated swales, or reducing impervious surface areas. Since each site is unique, designers should be flexible when tailoring their approach to potential stormwater management solutions. Developers should be encouraged to utilize LID techniques by incorporating related requirements into both the zoning and subdivision and land development ordinances.

SUMMARY OF RECOMMENDATIONS

- Continue to maintain current protection standards for steep slopes, woodlands, lakes and ponds, floodplain areas, and wetlands.
- Implement the pertinent recommendations outlined in the *Plumstead Township Environmental Resource Inventory* (2006) including the review of additional measures that would strengthen the natural resource protection standards.
- Re-examine the purpose and intent of the Delaware River Management Area Overlay District when applied in tandem with the RP and RO districts, to determine appropriate protection standards and provide ordinance amendment if appropriate.
- Amend the zoning ordinance and zoning map to reference DCNR's PAMAP LiDAR data as the mapping source for defining the Delaware River Management Area Overlay District.
- Consider incorporating riparian buffer standards consistent with the state's current recommendations, including protection standards for headwater areas and first order streams.
- Revise the zoning ordinance to incorporate a definition of hydric soils utilizing the most recent updated soils information from the Natural Resource Conservation Service (NRCS).
- Revise plan submission requirements in the subdivision and land development ordinance to require subdivision and land development plans show Proposed Conservation Areas designated in the *Bucks County, Pennsylvania Natural Areas Inventory Update* (where applicable).
- Continue to utilize the expertise of the Environmental Advisory Council (EAC) and promote their environmental stewardship.
- Monitor potential funding that may be available under the Highlands Conservation Act.
- Consider pursuing funding that may be available under the River Conservations Plan for suitable projects when determined applicable.
- Review recommendations from the Growing Greener Ordinance Assessment and determine which ones have merit for implementation.
- Consider incorporating Low Impact Development (LID) techniques into the zoning and subdivision and land development ordinances.

- Continue land preservation program efforts in a way that preserves the important natural resources within the township (See Chapter 4, Open Space and Recreational Resources).



Chapter 4

Open Space and Recreational Resources

Open space and recreational resources are an important part of a community's identity and quality of life. Open space (which includes farmland) contributes to the township's rural and agricultural character preserves the natural ecosystems upon which residents depend, and provides an attractive setting in which to live and work. Park and recreation facilities provide an avenue for residents to interact, exercise, and create a sense of community.

The purposes of open space preservation include: protection of property values; preservation of aspects of the natural landscape for future generations to enjoy; community enhancement; protection of public health and safety by restricting development on environmentally sensitive lands; groundwater protection; preservation of the farming industry; and provision of recreation land. For this analysis, open space consists of lands that have value because of their natural, cultural, or environmental features, which may include parkland retained in a natural state and/or used for passive recreation, and farmland. Parkland designated and used mainly for active recreation, like playgrounds or sports fields, is considered within the section on Parks and Recreation in this chapter.

Since Plumstead Township was founded in 1725, the rural character of the landscape has helped shape the lives of its residents. Acquisition and retention of open space, farmland preservation and the maintenance and expansion of park and recreation resources are key components of Plumstead Township's vision for the future.

PRESERVATION PROGRAMS

STATE/COUNTY AGRICULTURAL PRESERVATION PROGRAM

In an effort to stem conversion of agricultural land, Pennsylvania began a program aimed at the purchase of development rights on farms that meet certain criteria. The state farmland preservation program is authorized by Act 149 of 1988.

This program is administered at the county level by the Bucks County Agricultural Land Preservation program. The county farmland preservation program preserves agricultural lands by acquiring conservation easements that prevent development or improvement of the land.

A conservation easement is a legal covenant establishing a restriction that runs with the land, allowing a landowner the ability to protect his/her farmland for agricultural use while retaining ownership. All types of agricultural uses are permitted under the easement.

Factors considered in selecting a farm for preservation under the county program include location, nature of operations, soil quality, and owner involvement. Preserved farms must also lie within the township's agricultural security area (ASA).

COUNTY OPEN SPACE PROGRAM

In November 2007, Bucks County voters renewed the Bucks County Open Space program by approving an \$87 million bond issue for preserving open space. Funding for the program included \$25 million for Farmland Preservation, \$26 million for Municipal Open Space, and \$11 million for Natural Areas. Of the \$26 million in county funding allocated for the Municipal Open Space Program, Plumstead Township is eligible for \$678,864 (with a 25 percent municipal match).¹⁸ This sum can be used for financial assistance for primarily open space planning and acquisition.

LOCAL LAND PRESERVATION PROGRAM

Since its inception in 1997, Plumstead Township's Land Preservation Program has had three overriding goals: preserving farmland (and open space), acquiring park and recreation land, and protecting natural areas throughout the township. The township's voters have expressed their overwhelming support for the preservation program and its goals by approving three separate municipal open space bond initiatives totaling \$18 million, plus another \$4.5 million bond for parkland acquisition.¹⁹ In this Comprehensive Plan's survey, when asked the priority rating for open

¹⁸ Plumstead's open space plan update was approved by the Bucks County Open Space Board in 2010, so is eligible for its share of the funding allocation.

¹⁹ Plumstead Township voters have authorized three separate open space bond issues for preservation of farmland and other open space. In 2005, the Township was authorized to borrow \$8 million over the next few years for the purposes of acquiring conservation easements and open space. This bond, currently being used to fund land preservation activities comes on the heels of the 1996 and 2001 open space bonds, which borrowed \$4 million and \$6 million, respectively. In addition, a 2009 bond issue authorized \$4.5 million in funding for parkland acquisition. A substantial portion of future preservation efforts will be accomplished using this funding stream. However, the Township can continue to supplement these efforts with monies from the county program and other sources.

space and agriculture when planning for the future, 65 percent of the respondents indicated that it should be a high priority.

The *Plumstead Township Open Space Plan*, updated in May 2010, is the guiding document for prioritizing land for open space and agricultural preservation through acquisition, easement, or other means. This comprehensive plan endorses the land preservation recommendations and objectives in the open space plan and incorporates them both directly and by reference.

Many of the opportunities and goals identified in the updated open space plan remain incomplete or are part of ongoing activities, including:

- Continue to focus natural areas preservation on environmentally sensitive and scenic land, particularly within the eastern part of the township, within the Tohickon Creek and Paunancussing Creek watersheds, and in the vicinity of Fieldstone Farms.
- Establish co-easements of preserved properties by the township and land conservancies.
- Adopt a scenic setback ordinance for protection of both farmland and open space with scenic qualities.
- Continue to conduct landowner education on benefits and methods of land stewardship.
- Continue and strengthen efforts to publicize land preservation programs to potential applicants.

While these worthy activities and priorities for protection should continue to be pursued, an evaluation of the progress in preserving land thus far should be conducted and assurances should be made so that future priorities for preservation are in keeping with the desires of township residents.

The township's Open Space Advisory Committee, which was formed in 2008 with the mission of protecting in perpetuity those natural resources and farmlands deemed essential to preserve the unique character of the township, consists of five members. The committee has undertaken activities related to the open space planning and acquisition process, and was responsible for the production and approval of the recent open space plan update.

The open space plan update recommends the designation of a preservation committee, including owners of preserved properties, whose responsibility would be to actively recruit landowners and raise awareness of the township's and county's preservation programs. Such a committee should be designated to more assertively implement the township's open space opportunities and goals.

Plumstead has a substantial agricultural heritage, and farmland preservation continues to be a key focus of its Land Preservation Program efforts. The strategies outlined by the township's open space plan for achieving this goal include coordination with state and county preservation programs, and neighboring municipalities. The township operates on a parallel track with the county program to acquire conservation easements on farm properties that have been prioritized for retention.

The *Pennsylvania Municipalities Planning Code* (MPC) enables and encourages municipalities to plan for and protect agricultural lands and operations. Section 301(a)(2) includes farmland preservation among the components of a comprehensive plan's land use element, and Section 301(a)(6) includes prime agricultural land among the natural and historic resources intended to be protected through a comprehensive plan. The Pennsylvania Supreme Court has upheld zoning for the express purpose of preserving farmland and agriculture.

Farmland targeted for preservation has been identified in the township open space plan. Because of the higher quality of soil and the gently rolling terrain, the portion of the township west of Easton Road has historically been the principal farming area. Most farms in this area have either been preserved through county or state programs, developed, or are in the development application process. A few large agricultural properties here that remain unpreserved and undeveloped should be prioritized for preservation, according to the plan, as should larger farms east of Route 413 and smaller parcels contiguous with blocks of preserved farmland, as opportunities arise.

Similar to the county program, the township's program ranks farms for preservation priority according to criteria that include road frontage or other threats to preservation, and natural resource value. The Plumstead program is able to protect endangered farms that may not rise to the top of the list in the highly competitive countywide preservation program.

As of 2010, protected open space in Plumstead Township totaled more than 2,700 acres. This includes farms and other properties subject to conservation easements, parkland, and township-owned open space. The bulk of protected land, more than 2,300 acres, was preserved through the purchase or donation of conservation easements. The purchase of easements is a more cost-efficient method of preservation than fee simple purchases, allowing the township to preserve more acreage with less funding.

CATEGORIES OF OPEN SPACE

Open space resources can be classified as either permanently protected lands or vulnerable resources. Permanently protected lands include areas that are preserved due to the nature of their ownership, such as publicly owned lands (e.g., parks or vacant tracts), lands owned by nonprofit conservation organizations, other similar lands (e.g., cemeteries), and farmland protected by municipal and/or county preservation programs.

Vulnerable resources include those lands that are not developed or preserved and lacking the inherent mechanism in place that would discourage or prevent the land from being developed or being affected by development in the future. They include lands with preferentially assessed for their status as farms, forests, or other open space (Act 319), lands designated agricultural security area (ASAs), school facilities, and other lands containing significant natural resource areas. Owners

of these lands retain owner the right to develop the land in the future under the parameters of the underlying zoning.

INVENTORY OF PROTECTED LANDS

The state, county, and township each take part in the preservation of agricultural and open space lands as well as the provision of park and recreational resources as highlighted below.

COUNTY AGRICULTURAL PRESERVATION

Farms in the township that have been permanently preserved by Bucks County Agricultural Land Preservation Program with conservation easements include 38 parcels totaling nearly 1,248 acres as listed in Table 23 and shown in Figure 6, Open Space & Agricultural Resources.

*Table 23
Farmland Preserved through County Program, 2010*

Owner	Tax Parcel(s)	Acres
Gayman	34-011-021-001, 34-011-022	48.5
Shull	34-018-085, 34-018-099, 34-018-099-001, 34-018-085-004, 34-018-101-001	144.0
Haldeman	34-011-123	69.0
Bishop	34-011-018, 34-011-019-001, 34-011-079, 34-011-080, 34-011-089-002, 34-011-090-002	108.0
Gross	34-003-009	112.0
Detweiler	34-003-051, 34-003-051-002, 34-003-080, 34-003-080-002	74.0
Hunsberger-Moyer	34-003-029-002, 34-003-082, 34-003-082-002	106.0
Worthington	34-003-056, 34-003-056-002	127.5
Czupich	34-025-008, 34-025-018	54.0
Heacock	34-008-004, 34-008-005, 34-008-005-002, 34-011-025-001	104.0
Keim	34-004-042	59.0
Haring	34-003-074	27.0
Bartholomew	34-003-031	32.5
Carr	34-004-110	34.5
Reedman	34-011-028	57.5
Harrar	34-018-029, 34-018-031	49.0
Stitzinger	34-015-095	41.2
	TOTAL	1,247.7

Source: Bucks County Planning Commission, Plumstead Township (2010)

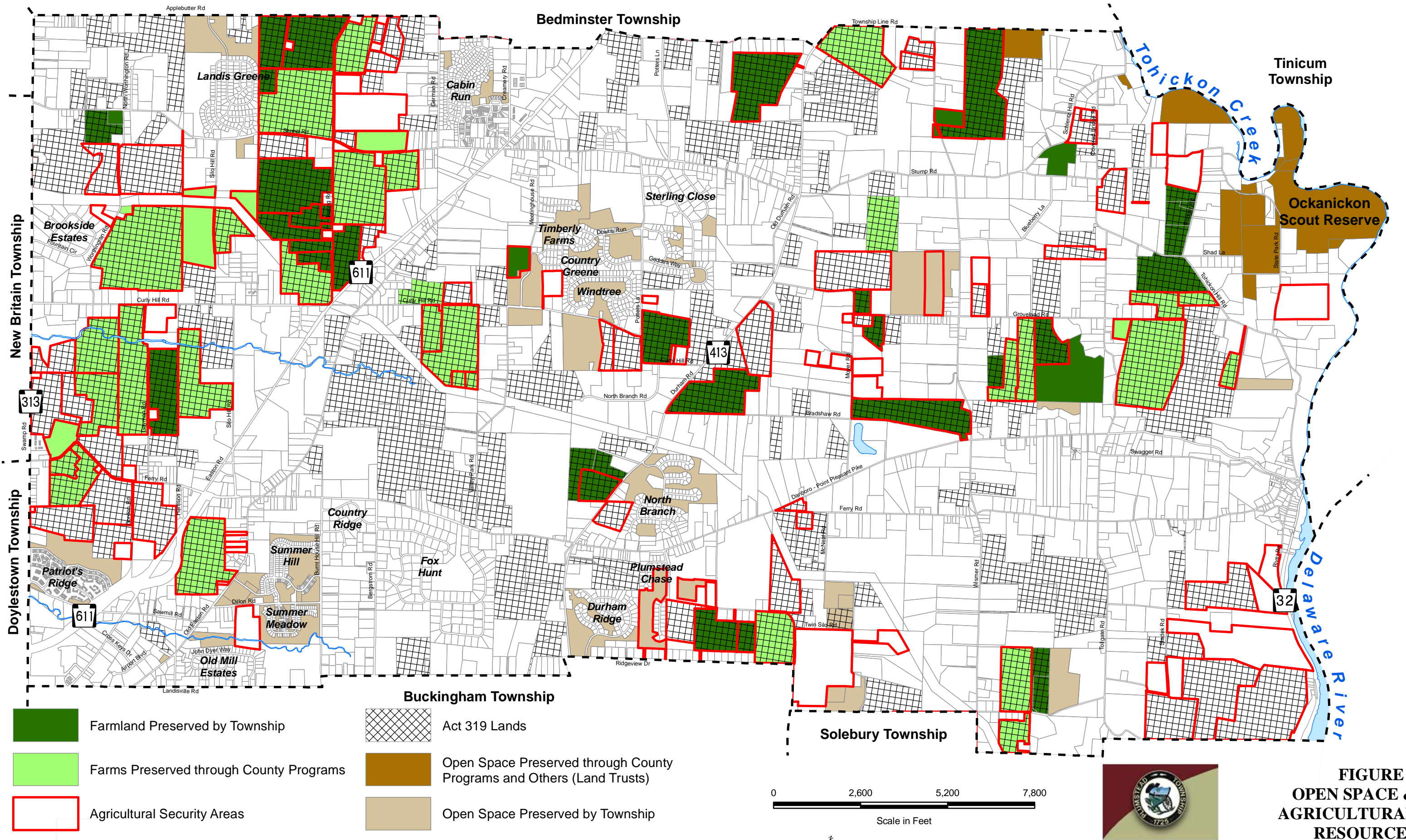
LOCAL AGRICULTURAL PRESERVATION

As part of Plumstead Township's Land Preservation Program, farms that have been permanently preserved by municipal conservation easement include 38 parcels totaling nearly 923 acres as listed in Table 24 and shown on Figure 6.

*Table 24
Farmland Preserved by Plumstead Township, 2010*

Owner	Tax Parcel(s)	Acres
Huber	34-003-068	68.0
Gayman	34-011-039-001	48.5
Bunch	34-003-007	64.5
Stitzinger	34-015-094, 34-015-094-007	28.0
Simkins	34-003-071, 34-003-071-002, 34-003-071-003	38.0
Rush	34-003-006	27.5
Grant	34-003-074-002	8.5
Bosworth	34-015-031-001	50.0
Trainer	34-015-021, 34-015-021-001, 34-015-021-002	48.0
Kratz	34-004-026	65.0
Maxwell	34-015-038, 34-015-039-005	21.5
Kirkegard	34-003-043, 34-003-043-001	18.0
Detweiler	34-015-007	36.5
Hayden	34-025-009, 34-025-009-001	19.4
Preston	34-018-032, 34-018-032-003	87.5
Lapsley	34-003-074-001	8.0
Frey	34-006-004, 34-006-007, 34-006-008-001	96.0
Hoffman	34-006-073	40.0
Meyers	34-018-008-001	59.0
Graham	34-006-065, 34-006-066, 34-006-066-001, 34-006-066-002	28.0
Scott	34-018-029-005	8.4
Sandler	34-006-029	17.5
Hellerick	34-003-099-004	25.5
Widmeier	34-004-057	11.5
Total		922.9

Source: Bucks County Planning Commission, Plumstead Township (2010)



**FIGURE 6
OPEN SPACE &
AGRICULTURAL
RESOURCES**



PLUMSTEAD TOWNSHIP COMPREHENSIVE PLAN

Source: Bucks County Board of Assessment Data (2010)
Plumstead Township Data (2010)

Prepared by
Bucks County Planning Commission
Geographic Information Systems Section
2010

ACT 319 LANDS

Numerous township residents have registered their properties with the county under the Act 319 preferential assessment program. The property owner receives a reduction in the property tax assessment, as an incentive to maintain land in agriculture or forest.

Act 319, the Pennsylvania Farmland and Forest Land Assessment Act of 1974, also known as the “Clean and Green” Act, is available for the following uses: agriculture, agricultural preserve, and forest preserve. Under the program, soil classification and yield per acre determine a property’s tax assessment. Enrollment in the program is continuous, unless the property is removed from the program by the landowner, or eligibility requirements are not met.

Lands under Act 319 are considered vulnerable resources because property owners have the right to terminate the agreement at any time. But if the agreement is terminated, the property owner must pay a penalty in the form of rollback taxes (i.e., the difference between the preferential assessment value and the full assessed value), plus seven years’ accumulated interest. Farmland that is permanently protected through municipal or county preservation programs is typically preferentially assessed under Act 319 as well.

Although Act 319 lands lacking permanent conservation mechanisms, use of the act shows the desire of landowners to maintain their properties as farms or woodlands. Enrollment into the Act 319 program is an example of local, grassroots action that should be considered within the comprehensive planning process. There are 216 parcels, totaling over 5,236 acres, covenanted under Act 319 in the township.

AGRICULTURAL SECURITY AREAS

There are farms enrolled in an Agricultural Security Area (ASA) that encompasses parcels located throughout much of the township. State legislation, Act 43 of 1981, created the ASA program to help protect the agricultural industry from increasing development pressure. ASAs are intended to promote more viable farming operations over the long run by strengthening the farmer’s right to farm.

Though the ASA does not protect land from future development, it is a useful and necessary adjunct to county and local programs geared toward permanent protection. Farms must lie within an ASA to be eligible for those programs.

To establish an ASA, farmland within the designated area must total 250 acres, and the zoning district(s) in which it is located must permit agricultural uses. Each ASA parcel must be at least 10 acres in area and consist of at least 50 percent of soil classes 1 through 4, soils that make the most productive farmland. ASA parcels need not be contiguous.

Placing farmland into an ASA is a voluntary action, done through landowner petition to the local governing body. ASAs, like Act 319, serve as a partial or temporary deterrent to development. Farmers whose lands are enrolled in an ASA gain the following benefits:

- Protection from municipal nuisance ordinances that restrict odors and noise in a community;
- Protection from governmental acquisitions of land through condemnation or eminent domain; lands proposed for such action within an ASA must first be approved by Agricultural Lands Condemnation Approval Board;
- Eligibility for the Bucks County Agricultural Land Preservation Program.

Commitment of property into an ASA is another example of local action that should be considered within the comprehensive planning process. As shown in Figure 6, there are 133 parcels totaling 3,558.53 acres in the township's ASA.

OPEN SPACE PRESERVED BY COUNTY AND OTHERS

Bucks County has preserved open space within Plumstead as part of the County's Natural Areas Program²⁰ and the County's Department of Parks and Recreation land acquisitions (discussed in the following Park and Recreational Resources section). Other permanently protected land in Plumstead includes properties under conservation easement or deed restriction held by land preservation trusts. There are 12 parcels totaling 228 acres.

Camp Ockanickon is operated as a recreational and educational camp by the Bucks County Council of Boys Scouts of America. Covering over 220 acres of scenic and environmentally sensitive land in Pipersville, this camp accounts for the vast majority of nonagricultural land preserved by trusts or other conservation programs. Totalling nearly 140 acres, the conservation easement for the camp is held jointly by Bucks County and Heritage Conservancy and is among the first of the County's Natural Areas Program grants. Other preserved land comprises six parcels totaling 88.5 acres, all under private ownership.

Open space preserved through Bucks County and land trusts are listed in Table 25 and shown in Figure 6. These properties are privately owned and not accessible to the public.

²⁰ The Bucks County Natural Areas Program is designed to protect the county's most critical ecosystems and unique natural features. The program works with willing landowners who agree to limit development on their land via conservation easements or fee-simple purchases.

Table 25
Open Space Preserved through
County Programs and Others, 2010

Property and Easement Holder	Tax Parcel(s)	Level of Protection	Acres
Brooks (Bucks County Natural Areas Program)	34-006-036	Conservation Easement	33.0
Slotter (Bucks County Natural Areas Program)	34-006-081, 34-006-085, 34-006-090	Conservation Easement	29.0
Camp Ockanickon - Boys Scout Camp Bucks County / Heritage Conservancy (Bucks County Natural Areas Program)	34-006-080, 34-006-096, 34-006-097, 34-006-098, 34-007-001, 34-007-002-001	Conservation Easement	139.5
Heritage Conservancy	34-006-012	Deed Restriction	24.5
Tinicum Conservancy	34-006-032-007	Conservation Easement	2.0
		TOTAL	228.0

Source: Bucks County Planning Commission, Plumstead Township (2010)

LOCAL OPEN SPACE PRESERVATION

Plumstead has acquired various open space properties as part of township's Land Preservation Program. The township owns (and maintains) these properties for purposes including natural resource protection, parks for active and passive recreation, and agricultural production. These properties are permanently protected and largely consist of open space within residential developments. Typically, these properties were acquired through dedication by developers of residential subdivisions as a condition of approval.

Residential and other general purpose open space that has been dedicated to the township encompasses 55 parcels totaling nearly 744 acres as shown in Table 26 and depicted in Figure 6.

Table 26
Open Space Preserved by Plumstead Township, 2010

Owner	Tax Parcel(s)	Level of Protection	Acres
Castree	34-006-046, 34-006-046-001	Conservation Easement	64.0
Radosin	34-025-010	Conservation Easement	62.5
Poneck	34-024-001-001, 34-024-003	Conservation Easement	20.0
Pilon	34-015-103	Conservation Easement	9.0
Colwell	34-015-102-001, 34-015-102-002	Conservation Easement	12.0
Feindt	34-006-045-001	Conservation Easement	9.0
Althouse	34-023-007	Conservation Easement	1.0
Barnes and Ellsworth	34-018-104-001	Conservation Easement	12.2
Carr/May	34-015-090	Conservation Easement	4.5
H. Stitzinger	34-015-091	Conservation Easement	28.8
Slotter/Myers	34-006-090	Conservation Easement	30.4
Cabin Run Open Space	34-032-114, 34-032-213	Township Open Space	11.9
Country Greene Open Space	34-035-053, 34-035-054, 34-035-087, 34-035-110, 34-036-019, 34-042-037	Township Open Space	44.6
Belmont Manor (Sterling Close) Open Space	34-036-005	Township Open Space	5.4
Durham Ridge Open Space	34-043-022, 34-044-063	Township Open Space	32.5
North Branch Open Space	34-017-006, 34-017-058, 34-017-059, 34-045-021	Township Open Space	51.8
Landis Greene Open Space	34-056-114, 34-056-115, 34-003-064	Township Open Space	47.4
Patriot's Ridge Open Space	34-049-067, 34-052-001, 34-010-074	Township Open Space	34.6
Windtree Open Space	34-042-061, 34-054-024	Township Open Space	59.4
Old Mill Estates Open Space	34-039-001	Township Open Space	11.0
Plumstead Chase Open Space	34-015-091	Township Open Space	28.7
Summer Hill /Summer Meadow Open Space	34-011-148, 34-014-041, 34-039-002, 34-039-145, 34-039-147, 34-039-150, 34-039-151, 34-041-007, 34-041-008, 34-041-069, 34-041-070	Township Open Space	94.7
Timberly Farms Open Space	34-042-123, 34-042-124, 34-042-125, 34-054-026	Township Open Space	60.6
Zaren Open Space	34-018-041-006	Township Open Space	8.0
TOTAL			744.0

Source: Plumstead Township (2010)

PRESERVATION TECHNIQUES

ZONING PROVISIONS

Zoning is the one type of regulatory power given to local governments that can be used to preserve farmland and open space on a township-wide basis. Zoning based on the comprehensive plan can be used to channel development away from significant natural resources and agricultural areas and into growth areas or other types of development districts better suited for more intensive development and the provision of public services and utilities.

The Plumstead zoning ordinance sets open space standards for residential development both by development type and by district. (See Appendix D, Zoning Map). It incorporates open space requirements into residential uses, ranging from a 60 percent minimum ratio for Use B2 Land Preservation Subdivision to 50 percent for Use B3 Land Preservation Subdivision with Transferable Development Rights (TDRs), which are permitted by conditional use within the R-1 Rural Residential and R-2 Residential districts. Use B3 Land Preservation Subdivision with TDRs is also permitted by conditional use in the VR—Village Residential and VC—Village Center districts. In the remaining zoning districts, the permitted residential uses generally do contain an open space requirement. The provision of open space within a development could benefit the community not only through the protection of sensitive natural resources (versus subdividing the entire site into private lots), but provide open space for passive and/or active recreational opportunities.

An examination of the existing zoning provisions reveals that in two cases where open space is required, there is a minimum threshold before the open space must be satisfied. Specifically, the minimum open space ratios for multifamily and attached single-family housing types (i.e., Use B5 Multifamily - Apartments and Use B6 Multifamily - Townhouses) is based on the number of proposed units. The required open space ratios are 20 percent for developments of 51 to 100 units and 30 percent for developments of 101 to 200 units. Consideration could be given to adding an open space standard for such developments that do not meet the 51-unit threshold.

In general, provisions of the Plumstead zoning ordinance have been effective in promoting the preservation of agriculture in appropriate areas, along with allied retail and service uses and activities that support farming. The township at present does not regulate farming through exclusive agricultural zoning districts, but rather, treats agriculture as a land use type (Use A1, General Farming) that is a permitted use in nearly all residential districts. The exceptions are the MHP Mobile Home Park District, the VR Village Residential District, and the RA4/CA-1 Residential District established for the Cabin Run development to settle a zoning ordinance challenge. Farming is not a permitted use in nonresidential districts. The A2 Agricultural Retail accessory use, applying to roadside stands, is permitted in most of the districts in which farming is a permitted use, except for

the VC Village Center District. Township officials may wish to consider the potential applications of agricultural zoning in preserving farmland and viable agricultural operations.

Section 207-504 of the zoning ordinance, applying to the RO Rural Residential District, affirms the farmer's right to farm and the township's intention to encourage farming. It informs residents that agricultural activities may take place at any time, subject to, federal, state and local regulations, and that noise, dust and odors resulting from normal and acceptable farming practices will be noticeable within the district. Consideration could be given to extending this notification to other appropriate districts in which farm and farm-related activities are present, such as the RP Resource Protection District.

Transfer of development rights (TDR) is a planning technique that can be used to spare farmland, open space, or historic sites by shifting building density from the site to be preserved to a location better suited for denser development. Plumstead's TDR program is available to owners of lots 25 acres or more within the RP and RO districts that are enrolled in the township's Agricultural Security District (Act 43) or on the official township list of properties nominated for preservation (sending areas). Use B3, Land Preservation Subdivision with Transferable Development Rights, is a conditional use within the R-1, R-2, VR, and VC zoning districts (receiving areas). The township's TDR program focuses on agricultural preservation; however, there have not been any successful applications to date. Consideration should be given to reevaluating the TDR program, particularly with regard to establishing or expanding sending and receiving areas to promote increased preservation of

WHAT IS A TRANSFER OF DEVELOPMENT RIGHTS PROGRAM?

A transfer of development rights (TDR) program shifts development away from agricultural land or sensitive natural areas, and concentrates it in areas designated for development. The theoretical basis of TDR is the legal definition of land ownership as consisting of a "bundle" of property rights, including the right to use airspace above the land and the right to develop the land. These rights can be separated from each other.

Transfer of development rights programs separate the right to develop property from the bundle of property rights. TDR programs allow property owners in the area where development is to be limited, the "sending area," to sell development rights for use on properties in a "receiving area" where a concentration of growth is desired. TDR programs in Pennsylvania must be voluntary, where sending area landowners have the option to build homes or to sell the development rights. Other states permit mandatory programs, where actual development is prohibited or strictly limited in the sending area. In Pennsylvania, TDR programs can only be used to transfer development rights within a single municipality, or among municipalities with a joint zoning ordinance, as authorized by 1992 MPC amendments.

significant farmland as well as the possible inclusion other important open space and historic resources. An expanded focus to include significant open spaces is consistent with the township's Land Preservation Program goal of protecting natural areas throughout. The township's *Environmental Resource Inventory* completed in 2007 provides ranking of priority parcels based upon significant natural resources within the township. Moreover, the 2010 update to the *Natural Areas Inventory of Bucks County, Pennsylvania* provides guidance for implementation of the natural areas protection component of the Bucks County Natural Areas Program. Both sources could be use for prioritizing open space acquisition by defining eligible open space parcels in Plumstead's TDR program. Important historic resource sites could also be incorporated into the focus of the TDR program if deemed appropriate.

Another zoning technique that has been used by adjacent communities (i.e., Bedminster, Buckingham, East Rockhill, and Tinicum townships) to preserve agricultural resources is agricultural zoning applied as either a district, overlay zoning district, or as part of their natural resource protection standards.

AGRICULTURAL ZONING

Sections 603 and 604(3) of the Pennsylvania Municipalities Planning Code specifically authorize municipalities to zone in order to protect prime agriculture and farmland through zoning. Zoning based on the Comprehensive Plan can be used to channel development away from agricultural area and into appropriate areas which are best suited for an efficient use of public services and utilities. By directing growth to these areas, development pressures on agricultural land should be diminished. Zoning for the express purpose of preserving farmland and agriculture was upheld by the Pennsylvania Supreme Court.

Of the various techniques for promoting the preservation of agricultural land, the establishment of agricultural zoning districts is available exclusively to municipalities.

Township officials can explore the provision of agricultural zoning as additional means of agricultural protection within appropriate areas of the township.

OTHER ISSUES AND OPPORTUNITIES

Land use strategies are one aspect of an overall approach to protecting agricultural areas. Economic and social issues also affect the local agricultural industry. Inflated prices for agricultural goods result from a variety of trends—from the U.S. energy policy (corn prices soar as grain is used for biofuel ethanol) to Asia’s demand for feed to produce meat products. The farming community in Plumstead faces rising costs of operations, fluctuating market prices for products, increasing property taxes, and conflicts with residential development.

Many farmers have expressed a desire to stay and farm the land, but farmland property values in southeastern Pennsylvania have increased dramatically due to their proximity to developing urban areas. The price of farmland in Bucks County is reflective of the greater profits that can be realized from manufacturing, commercial, and residential development.

Farmland is usually on relatively level, well-drained soils that are suitable for on-site disposal systems. This makes the farmland ideal for building. A farmer who is interested in continuing in farming may conclude that selling and moving to an area where land is cheaper is the best alternative. This presents a challenge to agriculture and open space preservation efforts.

Support services such as farm supply stores, machinery and parts suppliers, and feed operations may also gradually leave an area due to the loss of the agricultural community. Local processing operations tend to disappear as the concentration of agricultural productivity in the area diminishes. This means the remaining farmers often have to drive farther to deliver products or to get needed parts. New agricultural support services and the retention of existing support services in the area should be encouraged.

Residential development can cause friction between farms and new neighbors. Suburbanites tend to react unfavorably to farm noises and odors and there are often attempts to adopt restrictive regulations to control farm operations. Providing for lower residential densities in the agricultural areas helps minimize conflicts among residents. Separation requirements through setback and buffering between residential uses and farming operations can also help reduce some conflicts. Education of nearby homeowners about the importance of farming in the community can also help reduce problems.

The diversification of agricultural business, including the development of vegetable and specialty crops, organically-grown produce, and pick-your-own operations, has helped expand and strengthen the agricultural industry. Farms achieve a larger market share as suppliers of fresh fruits and vegetables, especially as awareness of the “local foodshed” grows in Bucks County. Increased consumer interest in healthy diet leads to a greater consumption of and market for these products. Specialty farms also have the advantage of reduced transportation costs due to proximity to their markets.

Farmers' markets are one way to bring local produce directly to local consumers. The Plumstead Grange sponsors a weekly farmers' market held on Saturdays from June through October. It may be possible to extend the season, perhaps on a regional basis.

The township *Open Space Plan* includes a recommendation to allow farm tourism "agritainment" activities on preserved farms. This also markets farms to local consumers and helps make preservation financially viable. Some farmers have turned to online marketing as a way to expand sales of farm products.

The zoning ordinance includes provisions regulating accessory farm uses that are intended to allow festivals, hayrides, farm tours, farm markets and special events that contribute to the agricultural economy, while minimizing the possible nuisance impacts from such activities. These provisions should be monitored and updated as needed.

Horse farms are a specialty farm type found in the township. Municipal ordinances and permit regulations should be monitored to ensure that they continue to enable related equine facilities, amenities and activities, such as bridle trails, stables, buffers and fencing.

Community supported agriculture (CSA), a partnership between a farm and the people who consume the food produced there, increases the public understanding of the health, economic, ecological and social issues involved in sustainable local food systems. CSA helps promote a sense of community and intimate connection with the vital processes that sustain all life. This can help reduce friction among residents and the farming operation. Another advantage of CSA is that it relieves the farmer of some of the risk inherent in growing food, and distributes it over a wider community, which agrees to share the risks, along with the benefits.

PARK AND RECREATIONAL RESOURCES

Parks and recreation areas are important features which help to define an area and create a sense of community. Such areas provide the opportunity for individuals to get outdoors and interact with others as well as to be closer to nature. In the Plumstead Township resident survey, when asked to rate township services, almost 70 percent of respondents rated parks and recreation areas as good or excellent.

Local township parks and recreation areas are supplemented by parks owned by the county and the state to provide over 266 acres of permanently protected park and recreation land within the township. Table 27 and Figure 7, Park and Recreational Resources, provide an overview of park and recreation resources in the township.

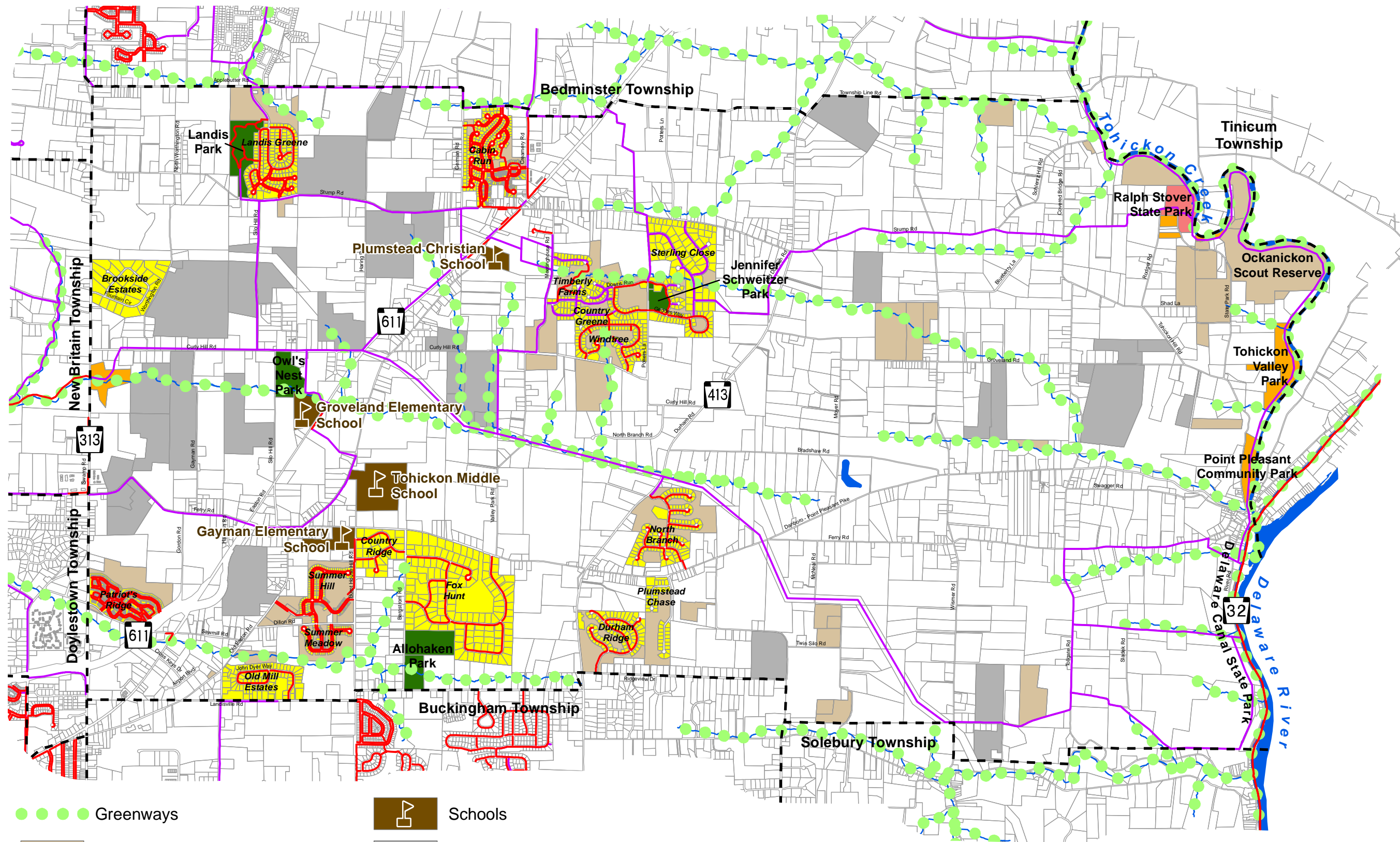
Table 27
State, County, and Township Parks

Park	Tax Parcel(s)	Recreation Facilities	Preserved Acres
State Parks			
Ralph Stover State Park	34-006-037, 34-006-074, 34-006-088	Hiking Trails, Picnic Shelters, Playground	30.8
Delaware Canal State Park (Plumstead Portion)	34-018-184, 34-020-068, 41-018-157 (portion of)	Multiuse Trails	16.6
		Subtotal	47.4
County Parks/Open Space			
Tohickon Valley Park	34-021-001	Hiking Trail	38.9
Point Pleasant Community Park	34-018-097	Hiking Trails, Picnic Tables	20.6
County Park/Open Space (Peace Valley Park)	34-008-002-003	None	24
County Park/Open Space	34-006-075	None	4.6
County Park/Open Space	34-006-076.002	None	3.1
County Park/Open Space	34-006-095	None	3.5
		Subtotal	94.7
Township Parks			
Allohaken Park	34-011-176, 34-023-031	Baseball Field	49.8
Owl's Nest Park	34-011-045-003	Pond	26.2
Landis Park	34-056-027	Baseball Fields, Ice Skating Rink, Picnic Pavilion, Basketball Court, Tot Lot, Multipurpose Court, Bike/Walking Path	37.2
Jennifer Schweitzer Park	34-035-086	Walking Path, Tot Lot, Baseball Field	10.9
		Subtotal	124.1

Source: Plumstead Township, Bucks County Planning Commission (2010)

STATE PARKS

The Commonwealth of Pennsylvania owns two parks totaling over 47 acres within Plumstead Township. Approximately 31 acres of the scenic 45-acre **Ralph Stover State Park** is located in the northern portion of the township where it borders the Tohickon Creek and Tinicum Township. The Tohickon Creek flows through the park, with the remaining park acreage in Tinicum Township.



Greenways

Preserved Farmland & Open Space

State Parks

County Parks/Open Space

Township Parks



Schools



Lands with Restricted Public Access



Residential Developments



Existing Trails/Sidewalks



Potential Trails/Sidewalks*

* The feasibility of potential trails/sidewalks will be based upon a detailed site analysis.

0 2,600 5,200 7,800

Scale in Feet



Prepared by
Bucks County Planning Commission
Geographic Information Systems Section
2010



**FIGURE 7
PARK &
RECREATIONAL
RESOURCES**

PLUMSTEAD TOWNSHIP COMPREHENSIVE PLAN

Stover Park contains hiking trails, picnic shelters and a playground. Recreational opportunities include fishing, hiking and canoeing. Water is released from the dam at Lake Nockamixon into Tohickon Creek on the first full weekend of November and the third weekend in March. The release provides an opportunity for whitewater enthusiasts to experience the thrilling run down the creek to the Delaware River. A launching area for whitewater craft, such as closed-deck canoes and kayaks, is located within the Park.

The **Delaware Canal State Park** is a linear park that runs parallel to the Delaware River through most of Bucks County. This state park extends from the city of Easton in Northampton County to Bristol Borough, crossing through Plumstead along the way. Important as a recreational amenity as well as for its historical and cultural significance, the canal state park occupies 16.6 acres within the township. Designated as a national historic landmark, the park contains a canal and towpath with locks and various buildings interspersed. The park provides opportunities for walking, biking, horseback riding, picnicking, fishing and nature study. In 2004, 2005, and 2006 the canal sustained damage from flooding. The canal, towpath, and locks require repairs to bring them back to pre-flood conditions.

COUNTY PARKS

The County of Bucks owns almost 95 acres of park/open space within Plumstead. Located in the northwestern section of the township bordering the Tohickon Creek, the county-owned **Tohickon Valley Park** contains almost 39 acres within Plumstead. This park also extends across the Tohickon Creek into Tinicum Township, where cabins, campsites, a swimming pool, and hiking trails are located. The facilities within Plumstead portion of the park include cabins, campsites, and hiking trails. One of the recommended park acquisition priorities cited in the *Bucks County Park and Recreation Plan* (1986) is to acquire additional land at several county parks including **Tohickon Valley Park**.²¹ The county park and recreation plan indicates that additional areas are needed to protect the integrity of the existing parks. In addition, the county plan identifies a proposed link along the Tohickon Creek connecting Ralph Stover State Park with Stover Myers Mill in Bedminster Township and beyond to Nockamixon State Park.

The 20.6-acre **Point Pleasant Community Park** is located between Tohickon Hill Road, Danboro-Point Pleasant Pike, and the Tohickon Creek near the village of Point Pleasant. This county-owned park contains some picnic tables and hiking trails, but consists primarily of unimproved natural wooded area.

²¹ According to the Director of the Bucks County Department of Parks and Recreation, an additional acquisition of 163 acres of land (within Plumstead and Tinicum townships) is being targeted for Tohickon Valley Park, which would increase the park holdings to 775 acres.

OTHER COUNTY PARKS/OPEN SPACE

As an enhancement and extension to existing parks, Bucks County has acquired several properties (about 35.2 acres) adjacent to existing parkland. Although not all of these county-owned lands contain park and recreational facilities, they were purchased with funding sources earmarked for parks, so were classified accordingly. Four parcels fall into this category as shown in Table 27.

A 24-acre parcel along the northern side of Route 313 is an extension of county-owned Peace Valley Park which is located in neighboring New Britain Township. The site is completely wooded and contains hydric soils and floodplains associated with the North Branch of the Neshaminy Creek which flows through the site. There are no recreational facilities on this site, it functions as open space for stormwater management purposes.

The County also owns three parcels in the northern portion of the township adjacent to Ralph Stover State Park and other preserved open space. These parcels are open to the public and could possibly be improved with recreational facilities in the future. They include a narrow 3.5-acre parcel located along a bend in the Tohickon Creek which is intended to accommodate a portion of the proposed Tohickon Creek Trail. This future trail is intended to connect the Delaware Canal State Park with Nockamixon State Park along the Tohickon Creek corridor. The remaining two parcels, located between State Park and Rodger roads, do not contain any recreational facilities and are intended to supplement the preserved open space and parkland in the area.

TOWNSHIP PARKS

The township owns and maintains four municipal parks totaling over 124 acres. **Jennifer Schweitzer Park** is centrally located within the township and is Plumstead's oldest municipal park. Established in 1994, the 10.9-acre park is located along Potters Lane in proximity to the Sterling Close, Timberly Farms, Country Greene, and Windtree developments. Recreational opportunities include a walking path, a tot lot and a baseball field.

Containing slightly over 37 acres, **Landis Park** is located along Gregory Drive in the Landis Greene development in the western portion of the township. This park contains a bike/walking path, two baseball fields, a basketball court, a multi-purpose court, picnic pavilion, tot lot, and an ice skating rink.

Established in 2004, **Owl's Nest Park** is Plumstead Township's newest municipal park. Located at the eastern corner of Curly Hill and Silo Hill roads in the western portion of the township, this 26.2-acre park contains a fishing pond and natural areas open to the public for walking.

Allohaken Park contains 49.8 acres and is the largest of the municipal parks within Plumstead. Located along Landisville and Bergstrom roads in the southern portion of the township, this park contains a baseball field and natural wildlife areas open to the public for walking.

SCHOOLS

Schools often provide open recreational areas and/or facilities available for public use when school is not in session. Often times, ball fields and playgrounds are open to the public when not used for school purposes and the school buildings may be available to the community by special arrangement. Within Plumstead Township, there are three public schools (Gayman Elementary, Groveland Elementary, and Tohickon Middle schools) and one private school (Plumstead Christian School). The township contracts with the Central Bucks School District for the use of playing fields/courts and building facilities at Tohickon Middle School when they are not in use for school activities. The continued cooperative use of school facilities will supplement the township's existing park and recreational resources and provide a cost-efficient use of these facilities for community activities.

PLANNING FOR PARKS, RECREATION, AND TRAILS

Park and recreational opportunities are important township amenities. According to the Plumstead Township resident survey, almost two-thirds of the respondents indicated that community recreation facilities should be given medium to high priority when planning for the township's future.

The township has been proactive in planning for parks as well as recreation and trail facilities. Created as a commission in 1992 and re-established as a committee in 2008, the township's Park and Recreation Committee consists of seven members that serve staggered 5-year terms. The Committee meets monthly (if necessary) and is charged with advising the governing body on the development and administration of programs, providing recommendations on maintenance plans for facilities and fields, providing recommendations regarding user fees and, assisting with recommendations for acquisition of land for park purposes. The Park and Recreation Committee has been involved in the development of most of the documents and studies listed below and continues to work on developing recreational programs for township residents.

In November of 2009, Plumstead voters approved a \$4.5 million bond referendum intended for park acquisition and recreational improvements. Before purchasing additional land and facilities, township officials hired a planning firm to conduct a municipal *Park Inventory and Analysis* (August 2010). Intended as a precursor to developing a Master Plan for township parks or as part of a Park and Recreation Plan update, the study inventoried existing features and amenities of each park and noted maintenance issues, as well as environmental and surrounding land use constraints. The study also identified opportunities to facilitate optimal use of each park to its optimal use and general opportunities to connect parks with nearby neighborhoods and schools. The information in the Park Inventory and Analysis should be used in moving forward with the development of a Master Plan or

Park and Recreation Plan update, which will provide an overall framework for how to best utilize the bond money to improve existing parks and acquire new parklands.

MUNICIPAL ORDINANCE PROVISIONS

The township has the following ordinance requirements related to park, recreation, and greenway/trail planning. These requirements are in addition to open space requirements.

Recreation land – The Plumstead Township Subdivision and Land Development Ordinance (SALDO) contains requirements for mandatory dedication of recreation land or fee-in-lieu. Applicable to all proposed residential subdivision and land developments, the ordinance requires a minimum amount of suitable recreation land per dwelling unit, unless the applicant agrees to a fee-in-lieu.

Bikeway requirements – The SALDO requires that all subdivisions or land developments in any residential, commercial or industrial district establish bike paths. Such paths may be installed in place of a required sidewalk along an arterial or collector road.

Sidewalk requirements – The SALDO requires that sidewalks be provided along all streets within a development site, existing and proposed, and along all perimeter roads.

These ordinance requirements serve to increase the park and recreation land in the township. In addition, the requirements to provide bikeways and sidewalks will help facilitate walkable neighborhoods and pedestrian connections throughout the township.

PARK AND RECREATION PLAN

Adopted on October 1, 1991, the *Plumstead Township Park and Recreation Comprehensive Plan* was last revised June 30, 1992. The plan provides an inventory of available facilities, assesses the park and recreation needs of the township, and sets out a number of general recommendations for future facilities and programs.

As part of the preparation of the 1991 plan, a resident survey was conducted to gather input regarding what types of recreational facilities and programs members of the community were most interested in. Respondents of the 1991 survey indicated future recreation facility preference included a nature center, playgrounds, bike trails, picnic areas, and open park space. Since that survey, the township has acquired most of its parkland, some of which contains natural, open areas for passive recreation and some with improvements such as tot lots, picnic pavilions, and playing fields.

Since this document is almost 20 years old, it be updated to account for changes that have occurred in land use activity since 1991, as well as changes to the amount of municipally-owned park and recreation land. Likewise, consideration should be given to conducting a new survey specific to

recreation facilities and programs to gauge public opinion and to provide direction as policies and recommendations are re-evaluated.

OPEN SPACE PLAN

The township's *Open Space Plan* was recently updated in May of 2010. The acquisition of park and recreation land is a stated goal in the plan with the primary objective of providing residents with the desirable facilities to pursue a wide range of passive and active recreational activities on public land within the township.

Noting that most of the residential and commercial development in Plumstead is located in the central portion of the township along Easton and Durham roads, the Plan recommends that efforts to acquire and develop park land for recreational use focus on that area. The Plan also recommends establishing trail connections between residential subdivisions and areas of interest such as schools, parks, playgrounds, shopping areas and places of employment, as well as connecting existing parks in the eastern portion of the township, such as Delaware Canal State Park, Ralph Stover State Park, Tohickon Valley Park, and Point Pleasant Community Park by a contiguous greenway and trail system.

The *Open Space Plan* lists the following objectives to attain the goal of park and recreation land acquisition:

- Update the existing *Plumstead Township Park and Recreation Plan* to accurately reflect the current recreational needs of the community.
- Strengthen development ordinances that require the dedication of recreation land as part of the subdivision process.
- Adopt an ordinance which requires the dedication of land for the development of trails and greenways as outlined in the *Plumstead Township Greenway and Trail Linkage Feasibility Study* (2001).
- Work with residential and commercial developers to provide park and recreation lands for active recreation in the central portion of the township.
- Locate and acquire the land necessary to establish a viable trail network that connects residential subdivisions to schools, parks, playgrounds, shopping areas and places of employment.
- Locate and acquire the land necessary to establish a greenway that connects areas of ecological importance in the eastern portion of the township.
- Work with Bucks County, the Commonwealth of Pennsylvania or other agencies that provide funding for the acquisition of land for recreational purposes.
- Update the *Plumstead Township Greenway and Trail Linkage Feasibility Study* to reflect recent development and preservation.

Many of the listed objectives are recommendations contained throughout this chapter. Implementation of the stated objectives and recommendations from the open space plan should continue to move forward.

PARK NEEDS ASSESSMENT

The National Recreation and Park Association (NRPA) is a national organization of recreational professionals whose guidelines are widely regarded as acceptable standards for determining the amount of parkland and types of recreational facilities necessary to meet the needs of area residents. Historically, the accepted NRPA standard has been a ratio of recreation acreage per 1,000 residents for several basic park types: regional parks, community parks, neighborhood parks, and mini-parks.²² These ratios have proven useful in determining the baseline needs of the community and were used in the township's 1992 *Park and Recreation Plan* to assess adequacy of park and recreation land.

More recently, however, the NRPA is recommending that park and recreation needs be based upon park usage and resident interests specific to each community. This information can be used to build upon existing resources and facilities and is often best obtained through resident surveys and community outreach efforts by the township's park and recreation committee. As previously recommended, a community survey specific to park and recreation interests should be conducted as part of an update to the municipal park and recreation plan.

For the purpose of evaluating park needs for Plumstead Township, the following provides a cursory assessment of regional, community, neighborhood, mini-parks, and linear parks. As the township optimizes vacant land on existing municipal parkland with additional facilities, some of the parks would be reclassified to higher level or different park classification.

PARK TYPES

Regional Parks are defined as areas of natural or ornamental quality for outdoor recreation (including play areas), such as picnicking, boating, fishing, swimming, camping, and trail uses. The service area encompasses several communities, within one hour's driving time. The desirable size of a regional park is 200-plus acres. A range of between five to ten acres per 1,000 population is recommended. The presence of natural resources or the proximity to such resources is a desirable site characteristic for regional parks.

Peace Valley Park directly abuts Plumstead in the southern portion of the township. While the park is not technically in Plumstead, this 1,500-acre park is in close proximity to township residents and serves the function of a regional park. In addition, Ralph Stover State Park (30.8 acres) and Tohickon Valley Park (38.9 acres) in northeastern Plumstead can be considered regional in nature as they serve a wider area than Plumstead Township. These two parks total almost 70 acres when combined. While this acreage falls short of the desirable size of 200 acres for a regional park, these parks are located adjacent to other preserved lands, such as Ockanickon Scout Reserve and county-

²² *Recreation, Park and Open Space Standards and Guidelines*, 4th Printing, 1990, National Recreation and Park Association.

owned property, which collectively surpass 200 acres. Based on an estimated population of 11,840 residents in 2009, Plumstead Township is adequately served by regional parks.

Community Parks are generally suited for recreational facilities such as athletic complexes or swimming pools and may also include natural areas conducive for hiking, walking, or passive enjoyment. The desirable size of a community park is approximately 25-plus acres. The NRPA suggests a park standard of 5 to 10 acres of community park land for each 1,000 residents. Within Plumstead, Point Pleasant Community Park (20.6 acres), Landis Park (37.2 acres), and Allohaken Park (49.8 acres) can all be classified as community parks. With 107.6 combined acres, easily surpass the township's community park needs of approximately 59 acres.

Neighborhood Parks provide areas for intense recreational activities such as field games, court games, playgrounds, or picnic areas. They serve as the recreational and social focus of a neighborhood. The NRPA suggests a park standard of 1 to 2 acres per 1,000 residents. Based on existing facilities, Jennifer Schweitzer Park (10.9 acres) serves as a neighborhood park. This park suffices in meeting the township's neighborhood park needs of approximately 11.8 acres.

Special Use Parks provide areas for specialized or single-purpose use such as a golf course, nature center, outdoor theater, historic site. There is no NRPA suggested standard for Special Use parks, and thus, should be based upon the needs of the community. Owl's Nest Park (26.2 acres) contains a fishing pond and natural areas open to the public for walking. Since this park does not seem to fit into the other park types due to its current size and facilities, its designation as a special use park seems appropriate. If additional recreational facilities are provided in the future, its designation could be changed to a more appropriate classification at that time.

Mini-Parks typically have specialized facilities that serve a concentrated or limited population or specific group such as very young children or seniors. Such parks are typically intended to be a small public gathering place which may contain site furnishing such a gazebo and benches. The suggested NRPA standard is 0.25 to 0.50 acres per 1,000 residents. A tot lot that is located in Cabin Run is classified as a mini-park. In addition, there is ample township open space areas associated with other residential developments where mini-parks such as a tot lot or public space with gazebo and benches could be added to serve residents in the immediate area.

Linear Parks are areas developed for one or more varying modes of recreational travel, such as hiking, biking, snowmobiling, horseback riding, and cross-country skiing. They may be local or regional in nature and are sufficient in width to protect the resource and provide maximum use. Desirable site characteristics of linear parks include built or natural corridors, such as utility rights-of-way, ridge lines, and roads that link other components of the park and open space system or points of interest in the community such as schools, libraries, commercial areas, and other park sites.

The *Delaware Canal State Park* is the sole linear park that crosses through the township. Planning for linear parks in the township has been addressed in the *Plumstead Township Greenway and Trail Linkage Feasibility Study*.

Commonwealth and county officials should continue to monitor and address the park and recreation facility needs of future residents through observations directly expressed by residents and recreation facility users. In addition, municipal, county, and state officials should evaluate the need for and possibility of linking regional parks with local parks (i.e., Community, Neighborhood, and Mini-Parks) as discussed under Greenways and Trail Planning below.

GREENWAYS AND TRAIL PLANNING

A greenway is a linear open space area established along either a natural corridor, such as a riverfront, stream valley, or ridgeline; or along an abandoned railroad right-of-way, a canal, scenic road, or other route. In addition to preserving natural resources, greenways may also provide safe, nonmotorized transportation routes to schools, commercial centers, neighborhoods, and recreational areas. The provision of trails within a municipality with links to its neighbors creates a valuable trail network that connects points of interest throughout the region. A regional trail network provides the opportunity for walking and biking versus driving to destinations, which provides for a healthy lifestyle.

Figure 7, Park and Recreational Resources, identifies Plumstead's greenways, preserved open space and agricultural lands, parks, schools, residential developments, and existing and potential trails/sidewalks within and adjacent to the township. Figure 7 is based on the *Plumstead Township Greenway and Trail Linkage Feasibility Study* completed in 2001.²³ While the *Greenway and Trail Study* provides a basis for updating the trail network, the township has experienced numerous land use changes, including the addition of *Allohaken Park* and numerous residential subdivisions.

For the *Greenway and Trail Study* to be useful into the future, it should be updated to account for changes that have occurred since its adoption almost a decade ago. In Figure 7, this process has been started with some modifications that were made from the 2001 *Greenway and Trail* map. For instance, a potential trail segment originally shown along lands enrolled in the County's Agricultural Land Preservation Program has now been relocated away from these preserved lands since public

²³ In 2001, the Township adopted the *Plumstead Township Greenway and Trail Linkage Feasibility Study*. The study inventoried the existing trail systems and greenways in the Township and examined the feasibility of providing trail linkages connecting points of interest throughout the Township and creating a gateway into Plumstead from the *Delaware Canal State Park* towpath. The study also examined the feasibility of linking existing and proposed trail systems within neighboring municipalities to eventually develop an intermunicipal greenway/trail network. A Greenway and Trail Network map was produced which shows township parks and other preserved lands, schools, property owned by the Boy Scouts of America, and the potential greenways/trails network.

access for trails is prohibited. Specifically, the trail/sidewalk shown along Curly Hill Road connecting *Owl's Nest Park* to the North Branch Trail in New Britain Township has been moved. This connection was previously shown crossing through farms preserved through the County Program. It has been shifted slightly to the northwest to correspond to the right-of-way of Curly Hill Road along the frontage of the preserved lands.

As shown in Figure 7, another modification made to the original 2001 *Greenway and Trail* was the incorporation of recommendations from a recent study that focused on providing sidewalk/trail connections between the residential, commercial, and institutional uses in the Plumsteadville area. Providing trail and/or sidewalk connections between Timberly Farms, Country Greene, Sterling Close, and Windtree developments would promote walkability that may not currently exist. This type of planning could be done throughout the township to identify similar potential connections as part of the recommended update to the township's *Greenway and Trail Study* or *Park and Recreation Plan*.

As part of the Comprehensive Plan survey, residents were asked to identify recreational facilities and activities that they would like to see improved or added to the park system. Overwhelmingly, the top response was walking trails, followed by bicycling facilities. These views are consistent with surveys taken in other Central Bucks municipalities. Township officials will continue to evaluate the feasibility of providing trails and sidewalks in strategic locations. With the presence of horse farms in Plumstead, officials may wish to examine if opportunities exists for the provision of equestrian trails if feasible.

BICYCLE AND PEDESTRIAN MOBILITY PLAN

The *Southeastern Pennsylvania Bicycle and Pedestrian Mobility Plan 1995* advocates provision of bicycle routes throughout the region. Within Plumstead Township, an off-road bicycle facility is shown connecting Ralph Stover State Park to existing trails in Nockamixon State Park and Delaware Canal State Park. A bicycle corridor is proposed along routes 413 and 611. This facility may be along either the roadway or a parallel bike path. An additional facility is proposed within the right-of-way along State Route 313. Facilities for cycling along these routes should be provided during reconstruction and repaving when possible.

COUNTY BICYCLE MASTER PLAN

Recognizing that cycling is a viable mode of transportation, Bucks County recently hired a consultant to develop the *Bucks County Bicycle Master Plan*. This plan, which is currently being developed, is intended to identify and inventory existing conditions, advance opportunities to improve and expand a broader network of multimodal routes serving existing residential and business areas of the County, and to improve the outreach and education of bicycle safety.

The *Bicycle Master Plan* will evaluate different routes and alignments to identify on-road and off-road routes, trail heads, destinations, multi-modal and transit stop connections, facilities, and links to destinations. While specific bicycle routes have not yet been identified, it is likely that some routes will cross through Plumstead Township. The document is expected to be completed in mid-2011. Once completed, the recommendations in the *Bucks County Bicycle Master Plan* should be incorporated into the township's updated *Park and Recreation Plan*.

SUMMARY OF RECOMMENDATIONS

OPEN SPACE AND AGRICULTURAL RESOURCES

- Continue collaboration among county, state and local programs, and with other municipalities, to preserve farmland, open space, and natural areas through easement acquisition.
- Focus farmland preservation activity on large farms west of Easton Road and east of Route 413, and on other areas identified in the *Plumstead Township Open Space Plan* (2010).
- Focus natural areas (open space) preservation on scenic, environmentally sensitive land in the eastern part of the township, as identified in the township's *Open Space Plan*.
- Review overall open space standards for appropriateness, with particular attention to adequacy of provisions for smaller multifamily and attached residential developments and village-type development.
- Consider extending the farmer's right-to-farm notification to other appropriate districts in which farm and farm-related activities are present, such as the RP, Resource Protection District.
- Continue to monitor use provisions and other zoning regulations to ensure their ability to support various types of agriculture and related accessory uses and services, such as farm stands, supply stores, and feed operations.
- Evaluate the Transfer of Development Rights (TDR) program for refinement that may make it more useful for farmland preservation.
- Explore the provision of agricultural zoning as additional means of agricultural protection within appropriate areas of the township.
- Encourage community supported agriculture (CSAs), specialty farming, farmers' markets, and farm tourism or agritainment as activities that support farming.
- Monitor municipal ordinances and permit regulations to ensure that horse farms continue to enable related equine facilities, amenities and activities, such as bridle trails, stables, buffers and fencing.
- Continue the establishment of co-easements of preserved properties.
- Adopt a scenic setback ordinance to protect scenic open space and farmland.
- Establish a township land preservation committee in connection with continuing efforts to publicize land preservation programs and conduct stewardship education initiatives.

PARK AND RECREATIONAL RESOURCES

- Utilize information in the *Park Inventory and Analysis* (2010) in conjunction with developing a Master Plan for township parkland or as part of an updated Park and Recreation Plan.
- Update the *Plumstead Township Park and Recreation Comprehensive Plan* (1991) to account for changes that have occurred in land use activity and township-owned park and recreation land.
- Conduct a community survey specific to park and recreation interests as part of the *Park and Recreation Plan* update.
- Update the *Plumstead Township Greenway and Trail Linkage Feasibility Study* (2001) to account for new developments and changes.
- Continue cooperating with the state, county, and adjacent municipalities for the acquisition and development of a regional greenway corridor and trail network.
- Move forward with implementing the stated objectives and recommendations in the township's *Open Space Plan* related to park and recreational resources.
- Continue to promote the cooperative use of school district facilities to supplement the township's existing park and recreation resources and provide a cost-efficient use of these facilities for community activities.
- Coordinate planning and construction of bike route facilities on state routes with PADOT.
- Continue to require sidewalks and bike paths as development is proposed to encourage linkage with surrounding pedestrian and bikeway routes.
- Examine the feasibility of providing equestrian trails in strategic location within the township.
- Consider providing mini-parks (e.g., tot lots, improvements such as benches and gazebos) on township open space areas within residential developments that could serve residents in the immediate area.



Chapter 5

Historic and Scenic Preservation

Due to its prominent location along the Delaware River, a historic trade route and transportation corridor since the early 1600s, Plumstead Township has accumulated a wealth of historic resources. From 18th-century settlements like the now defunct village of Lower Black's Eddy, to the grist mills that sprang up along the Delaware's many tributaries, to the hiding places used by the infamous Doan Gang that disrupted British supply lines during the Revolutionary War, the township has many precious structures and sites in need of protection from disappearance, development or disrepair.

The historic buildings, sites, and villages throughout the township are an integral component of the fabric of the community and contribute to its character. They provide continuity to the sense of place, in both geography and time, and serve as reminders of what a community has been, is, and hopes to be. To keep these resources safe for the future, a comprehensive plan must provide for their protection and preservation.

While many of the township's resources have been lost over time, fortunately, many of these resources are still intact. The township has proactively taken measures to ensure that these resources will be preserved in to the future but there may be additional actions that should be considered to enhance their protection as described below.

TOOLS AND TECHNIQUES OF HISTORIC PRESERVATION

Historic preservation measures originating at the national and state levels can be used to protect resources locally. The principal regulatory systems are detailed below

THE NATIONAL REGISTER

The National Register of Historic Places is part of a nationwide program to coordinate and support public and private efforts to identify and protect resources of significance in American history, architecture, engineering, and culture. Nominations for listing are administered through the Pennsylvania Historical and Museum Commission. National Register listing restricts potential

alteration or demolition of historic resources through activities involving the federal government, but does not abridge the rights of private property owners.

NATIONAL REGISTER CRITERIA

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

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

Source: <http://www.cr.nps.gov/nr/listing.htm>

HISTORIC PRESERVATION LEGISLATION IN PENNSYLVANIA

The Commonwealth of Pennsylvania has enacted laws that support historic preservation efforts at the municipal level. The state's preservation enabling legislation has two distinct arms, but the regulatory measures afforded by each work well in concert. They also can and should be applied to protect National Register-listed resources.

One preservation path is through the zoning power granted municipalities by the state's land use law: Act 247, the Pennsylvania Municipalities Planning Code (MPC). Amendments to the MPC enacted in 2000 authorize zoning ordinances to protect historic resources. Sections 603(b)(5) was amended to allow the ordinances to protect historic resources and a new Section 603(g)(2) requires that zoning ordinances "shall provide" for the protection of historic features and resources.

Zoning ordinances can thus include regulations that allow municipalities to choose the types of land uses that may be permitted in a historic district or an area of historic properties. They can also guide other characteristics such as density of development, maximum building sizes and setbacks, or allow for reuse and redevelopment of properties within a historic district so that newer or rebuilt structures will complement its appearance and maintain its historic character.

Act 167, the state Historic District Act enacted in 1961, enabled municipalities to designate historic districts and adopt ordinances crafted to protect them. The act provides for appointment of a local Historic Architectural Review Board (HARB) to advise the governing body on the appropriateness of

proposed construction and renovations within a historic district. The HARB must include at least three members with certain related professional skills: an architect, a building inspector, and a real estate broker.

Historic district ordinances are a means of regulating the appearance of places with historic resources by establishing a mechanism for reviewing exterior changes. The level of regulation a municipality may undertake through a historic district ordinance can extend from controls on the demolition of historic buildings to detailed guidelines governing exterior alterations.

These controls govern only those alterations that require a building permit and are visible from a public street. Activities such as painting, minor repairs, and interior work are not subject to HARB review.

HISTORIC RESOURCES IN THE TOWNSHIP

The township's historic resources are shown on Figure 8, Historic & Scenic Resources. This figure depicts National Register-listed resources and potentially eligible resources, as contained in the Cultural Resources Geographic Information System (CRGIS) maintained by the Pennsylvania Historical and Museum Commission, as well as locally designated sites and districts.

NATIONAL REGISTER-LISTED HISTORIC RESOURCES IN THE TOWNSHIP

Three historic districts and two covered bridges in the township have been documented and listed on the National Register of Historic Places, according to the CRGIS database. The National Register-listed historic districts consist of the villages of Dyerstown, Gardenville/North Branch, and Point Pleasant. (For the history and characteristics of these villages, see the Village Planning section.) Two covered bridges dating to the 1870s are listed on the National Register. They are the Cabin Run Bridge, owned by Bucks County, a gable-roofed bridge west of Ralph Stover State Park, and the Loux Bridge, which spans Cabin Run Creek along Pipersville Road. The Loux Bridge, the second smallest of the covered bridges in the county, has a distinctive oval-shaped portal instead of the common triangular opening. A portion of the Delaware Canal State Park (formerly the Delaware Division of the Pennsylvania Canal) a National Historic Landmark, also runs through Plumstead.

OTHER HISTORIC RESOURCES

The CRGIS list as of September 2010 cited 27 historic resources in the township. The list encompasses resources that have been named to the National Register, including the historic districts, bridges and National Landmark discussed in the previous section. It also details resources that are eligible to be placed on the register but have not been listed, as well as those of undetermined eligibility or unknown status. About half of the resources on the CRGIS list (13) are of undetermined eligibility for National Register listing, but some, including the Danboro and Twin Silo

Hill Road historic districts and two bridges (Childs Ford and Ralph Stover Park), are deemed eligible for listing. Table 28 notes properties that are listed or eligible for listing on the National Register.

*Table 28
Plumstead Township Properties Listed on National Register, or Eligible Listing*

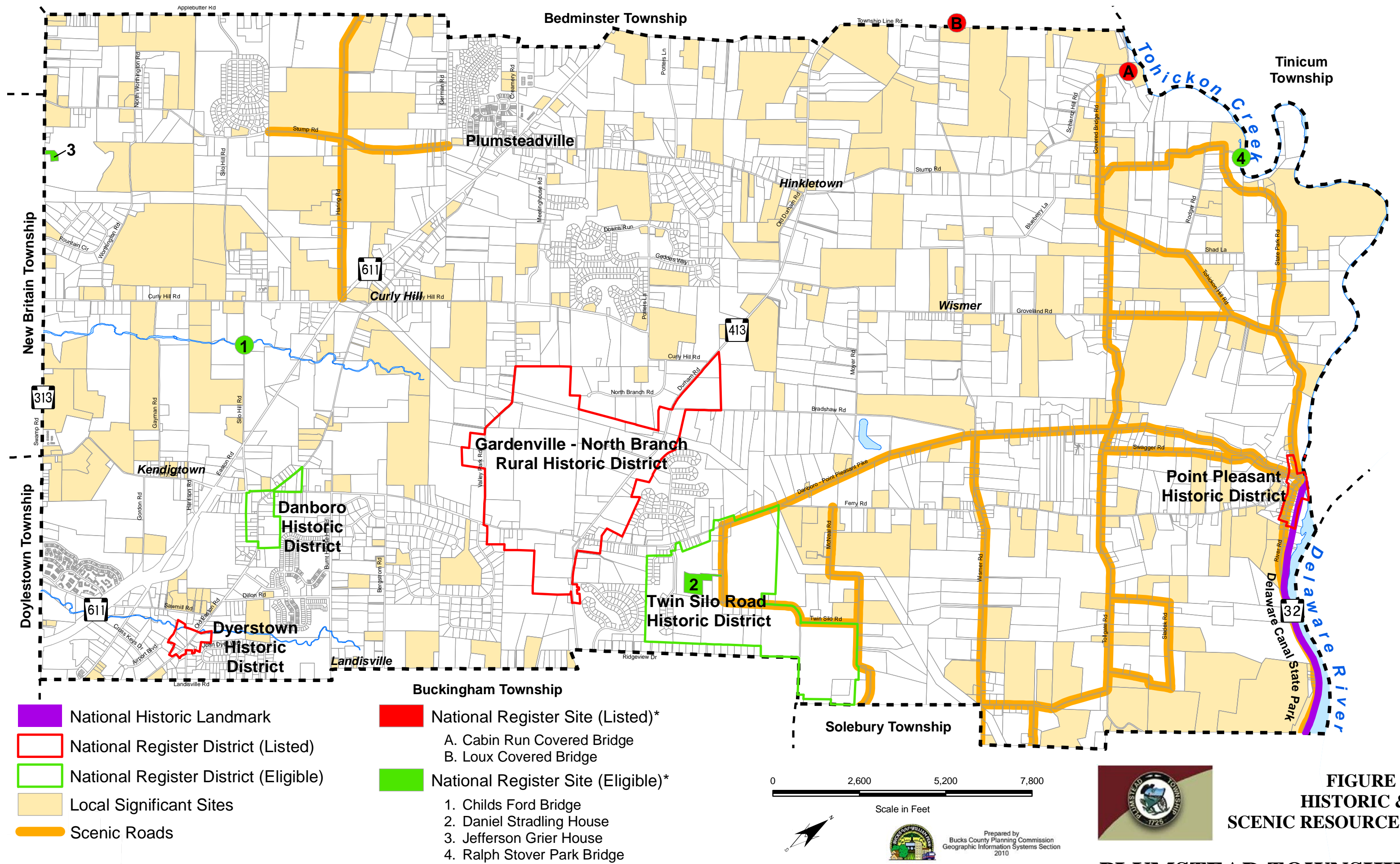
Property	Location	Listed/ Eligible
Cabin Run Covered Bridge	West of Ralph Stover State Park	Listed
Dyerstown Historic District	Old Easton Rd./Stony Lane	Listed
Gardenville-North Branch Rural Historic District	Durham Rd., Pt. Pleasant Pike	Listed
Loux Covered Bridge	SE of Pipersville	Listed
Point Pleasant Historic District	River Rd./Pt. Pleasant Pike	Listed
Childs Ford Bridge	S.R. 7009	Eligible
Danboro Historic District	Old Easton Road	Eligible
Daniel Stradling House	5550 Twin Silo Road	Eligible
Jefferson Grier House	5835 Swamp Road	Eligible
Ralph Stover Park Bridge	Plumstead/Tinicum Township	Eligible
Twin Silo Road Historic District	S.R. 413/Mt. Pleasant Pike	Eligible

Sources: PHMC, CRGIS (September 2010); Plumstead Comprehensive Historic Resource Plan (2006)

PLUMSTEADVILLE

Plumsteadville, the township hub characterized by late 19th-century and early 20th-century historical development, is defined by its commercial presence. Preserving its character as a commercial center is already established through its village zoning districts. But recent construction and alterations to existing buildings have compromised its historical integrity to the degree that it has been determined ineligible for listing as a National Register historic district.

Nevertheless, there are historic structures in Plumsteadville worthy of preservation. There is also potential interest in creating a town center around Plumsteadville. Historic preservation techniques could be incorporated into village district zoning as discussed in more detail in the Village Planning section.



**FIGURE 8
HISTORIC &
SCENIC RESOURCES**

PLUMSTEAD TOWNSHIP COMPREHENSIVE PLAN

CURRENT PRESERVATION PLANNING, POLICIES, AND PRACTICES

HISTORIC RESOURCE INVENTORY

A historic inventory is the first step in resource protection. The township's inventory should be reviewed to determine whether it is in need of updating, particularly with regard to properties of local significance, resources potentially eligible for National Register nomination, and those of undetermined eligibility.

The township has taken important steps toward identifying and protecting its historic resources by periodically updating its historic resources inventory. A historic survey completed in 1990 by the Bucks County Conservancy, now known as the Heritage Conservancy, listed numerous properties as potentially eligible for listing on the National Register, or worthy of further study.

In 2001, a consultant updated the historic resources inventory through the preparation of the township's *Historic Site Survey, Final Report*. This survey included sites determined to be locally significant, and these sites were ranked according to their relative historic value and architectural integrity.

In 2006, the township hired a consultant to prepare the *Plumstead Township Comprehensive Historic Resource Plan*. This plan, incorporating the previous Historic Site Survey by reference, makes use of some of its key findings. The *Comprehensive Historic Resource Plan* is intended to define the characteristics that make the areas of Dyerstown, Danboro, Gardenville, Plumsteadville, and Point Pleasant unique and provide means to help protect historic resources in the township through proposed preservation regulations.

This plan also provides options that may assist the township in pursuing new approaches to preserving its significant historic resources. These options include the establishment of either a historic district ordinance or a historic zoning overlay district. It also discusses the option of including traditional neighborhood development (TND) zoning provisions to promote compatible design in infill and other new development.

Key to any of the outlined preservation options is a solid public involvement program. Because owners of historic properties may eventually take on additional responsibilities under any proposed preservation plan, gaining owner and citizen support will pave the way for any regulation to be more effective as a long-term preservation tool.

While the *Comprehensive Historic Resource Plan* generally addresses historic resources throughout the township, it focuses primarily on its villages. Many of the locally significant properties identified in the township's 2001 inventory have since been subdivided and/or developed into residential housing units, which may have affected the value and integrity of the historic resource. Therefore,

the township should consider updating its historic site inventory and completing National Register nominations for the Danboro Historic District, as well as for other sites deemed to be eligible for register listing.

ADVISORY COMMITTEE

The township has a nine-member Historic Advisory Commission, which was formed in 2002. The commission's role is to advise the board of supervisors on land use plans, restoration and sign applications, building, zoning, and demolition permits, ordinances, and other issues that affect historic resources. It also gathers historic information about the township and promotes history education.

The commission is spearheading a program to install decorative signs at the township's most important historic sites and structures, so they can be more easily identified by residents and visitors. The first phase of the program, marking historic schoolhouses and meeting places, has been completed.

ACT 167 DISTRICTS

In addition to updating the historic resource survey and moving forward with additional National Register listings, township officials may wish to consider making use of another historic preservation device, the creation of historic districts under Act 167. The *Comprehensive Historic Resource Plan* has identified three areas recommended for designation as local historic districts under Act 167: Danboro, Dyerstown, and Point Pleasant.

The state's Act 167 affords broader protections than those resulting from National Register listing. Both National Register listed districts and locally significant historic districts may be regulated under Act 167.

ZONING PROVISIONS

To satisfy the provisions of the MPC while proactively protecting its historic resources, the township has adopted historic resource village district provisions in the zoning ordinance. (See Appendix D, Zoning Map). Section 27-2317 of the township zoning ordinance contains regulations intended to protect historic resources. That section includes provisions to:

- delay or control demolition through permit issuance requirements;
- prevent demolition of any identified resource of local, state, or national significance, unless it is documented to be irreparable;
- require new or rebuilt structures to retain the character, architectural style, setbacks and bulk of the originals; and
- bar demolition by neglect.

The zoning ordinance also contains adaptive reuse provisions. Adaptive reuse is a technique that supports sustainability of resources, as it encourages the conversion of historic buildings to another purpose when their original use is no longer economically or functionally viable. Adaptive reuse provisions in the ordinance allow residential and bed-and-breakfast conversions that favor the conservation of large older homes.

Residential conversion (Use B10 in the zoning ordinance), allowed only in the VR—Village Residential and VC—Village Center zoning districts that encompass nearly all of the township’s historic villages, allows a detached single-family home to be converted into two or more dwelling units, while requiring retention of the exterior appearance of the home. Bed and breakfast establishments (Use B13) are also allowed only in those two districts. Both uses are allowed by right in the VC District and by special exception in the VR District.

These use provisions should be reviewed to see if expansion of permitted types of reuse, and of the zoning districts in which they are permitted, would further promote historic preservation in the VC District and in other appropriate places in the township, and if so, updated accordingly. One possible approach is to add such uses for historic resources that front on arterial roads.

Use provisions for barns should also be reviewed and updated, with the purpose of aiding the retention and maintenance of these structures when they are not in active agricultural use. This may involve permitting residential, professional, light commercial, cultural or institutional adaptive reuse of barns in agricultural or low-density residential districts. The National Historic Trust’s “Barn Again” program provides information and technical assistance on the preservation and practical reuse of historic barns for today’s farming needs.

(<http://www.preservationnation.org/issues/rural-heritage/barn-again>)

The township zoning ordinance also regulates village zoning districts in the township, as discussed in the Village Planning section.

ADDITIONAL PRESERVATION TECHNIQUES

It is recommended that township officials review the historic preservation ordinance to determine whether its scope should be extended and/or new provisions enacted to better protect historic resources, discourage demolition and historically inaccurate modification, and provide more detailed performance standards for appropriate infill, new construction, and redevelopment.

Potential areas for review and updating, in addition to the potential designation of Act 167 historic districts, include expansion of performance standards included in the zoning ordinance through a set of design guidelines, establishing a set waiting period before demolition, and protection of geographically dispersed resources through an overlay district or other means. The demolition

waiting period, often set at 60 days, is intended to provide time to document the resource before it is demolished or to allow time to find an alternative to demolition.

There are additional planning and zoning techniques the township may wish to apply to strengthen and focus its ability to protect historic resources. For example, the township's historic districts and scattered-site resources now are protected primarily through two sources: the regulations applying to the village center zoning districts in which these historic areas are located, and the existing historic preservation ordinance.

Design guidelines could be devised to apply to some or all of the designated historic districts, to encourage retention of scale, style, materials, colors, architectural features and other elements of visual appearance in historic districts and properties throughout the township, as structures are restored or built. Such guidelines are advisory, rather than mandatory, in Pennsylvania.

The guidelines are often used within Act 167 historic districts. A HARB may consider adherence to the guidelines when making recommendations to the governing body on exterior changes to historic structures.

Another regulatory method of historic preservation is the use of a historic overlay district. An overlay district creates a second, mapped zone superimposed over the underlying zoning district, while leaving intact the provisions of the underlying zone.

Overlay districts typically provide for a higher level of regulation in certain areas: floodplains, geological formations, major road corridors, and historic districts, for example. The historic overlay is especially effective in protecting scattered-site resources located outside neighborhoods of historic structures concentrated enough to be suitable for designation as Act 167 districts. The township's historic resource plan recommends enacting overlay districts in Plumsteadville, in and around Gardenville, and to protect scattered-site resources.

A historic overlay district could be structured, for example, to incorporate conditional use, special exception or other enabling provisions for specific uses targeted to aid retention of dispersed historic properties, along with the demolition regulatory provisions now found in the code of ordinances. It could be supplemented by design guidelines.

SCENIC PRESERVATION

The preservation of scenic resources reinforces a unique sense of place and helps to retain our cultural and natural heritage for generations to come. Scenic resources are characterized by natural and visual qualities, among them prominent geological formations, pristine landscapes, historic structures and sites, villages, farmlands, and unique combinations of resources such as river and stream valleys and wooded hillsides. Scenic resources can be undermined by insensitive development and activities.

IDENTIFICATION OF SCENIC RESOURCES

Scenic resources are generally categorized as either scenic roads or scenic vistas. The viewshed surrounding a village is a scenic resource that is discussed separately in the following chapter on Village Planning. Scenic roads are segments of roadways that contain natural, historic, or cultural resources in proximity or contain concentrated scenic vistas. Scenic vistas are areas that have sweeping views of the landscape.

As part of this comprehensive planning process, scenic roads have been identified throughout the township. Plumstead is fortunate to possess an abundance of roadways that qualify as scenic. While the process of identifying scenic roadways can be subjective, a concerted effort was made to refine the list of roadway segments to those which are characterized by their special visual attributes. The scenic road designation means that any further alteration or improvement on that section should maintain the character of the road.

The following roads are classified by this Plan as Scenic and are shown on Figure 8, Historic & Scenic Resources.

- Covered Bridge Road
- Danboro-Point Pleasant Pike – Limits: Twin Silo Road to River Road
- Groveland Road – Limits: Tollgate Road to Tohickon Hill Road
- Haring Road
- McNeal Road
- River Road (Route 32)
- Short Road
- Sladek Road
- State Park Road
- Stump Road – Limits: German Road to Landis Greene development
- Stump Road – Limits: Covered Bridge Road to State Park Road Tohickon Hill Road
- Swagger Road
- Tohickon Hill Road
- Tollgate Road
- Twin Silo Road
- Wismer Road –Limits: Danboro-Point Pleasant Road to township border

This Plan recommends that township officials consider ordinance amendments (e.g., overlay zoning district) to protect the scenic value of these roadways. These scenic values include entrances to historic villages and scenic vistas from roadways including historic structures, historic sites, streams, valleys, fields and hillsides. The following protection standards are recommended for Scenic Roads:

- Site development as to preserve the views of the landscape from the roadway where possible;
- Preserve existing tree lines along roadways;
- Promote the use of native vegetation using a natural appearance, rather than uniform standards;
- Preserve views from the roadways to maintain views of historic sites and/or structures;
- Integrate significant landscape forms, such as hedgerows, hillsides, and stream valleys into the development;
- Limit street lights;
- Provide sidewalks only when appropriate;
- Use appropriate guiderail treatments; and
- Forbid billboards along scenic roads.

SCENIC BYWAY PROGRAM

The Pennsylvania Byways Program, sponsored by the Pennsylvania Department of Transportation, encourages communities to collaborate in obtaining state scenic byway designation from the Pennsylvania Secretary of Transportation and also in pursuing a national scenic byway designation from the U.S. Secretary of Transportation. The state byways program parallels the federal Highway Administration's National Scenic Byway Program to:

- support local planning efforts to achieve byway designations;
- protect and enhance the visual quality of designated routes;
- maintain byway resource qualities along designated routes;
- educate residents and visitors about the history and culture of the Commonwealth; and
- promote tourism and enhance economic development potential on designated byways.

Designated scenic byways may be eligible for funding for improvements, enhancement and protective measures. River Road in Bucks County has been proposed as a scenic byway. The Delaware and Lehigh National Heritage Corridor and the Heritage Conservancy have been providing technical assistance to municipalities along the Delaware River to establish a scenic byway for River Road extending from Bristol Borough north to the City of Easton in Northampton County. Plumstead supports this designation in the limited portion of River Road that lies within the township. To date, some Bucks County municipalities have supported this initiative, while others have not.

SUMMARY OF RECOMMENDATIONS

- Update the township's historic resource inventory.
- Implement the preservation program outlined in the *Plumstead Township Comprehensive Historic Resource Plan* (2006).
- Evaluate the completion of National Register nominations for resources determined to be eligible.
- Evaluate the feasibility of designating the Danboro, Dyerstown, and Point Pleasant historic districts as Act 167 districts.
- Continue the historic marker program.
- Review zoning ordinance provisions for use types to determine whether added uses, relocation of uses or other changes are desirable to bolster protection of historic resources and districts through adaptive reuse, particularly in village and agricultural zones.
- Evaluate the need for additional preservation measures such as overlay districts and design guidelines where appropriate to supplement existing regulations or extend preservation protections.
- Monitor physical conditions of historic properties. Work with owners and enforce zoning and property maintenance codes as necessary, to avoid losing historic buildings to demolition by neglect. Where possible, enlist municipal agencies and community groups in finding buyers and productive uses for vacant village structures.
- Evaluate the feasibility of adopting overlay zoning for the protection of the township's designated scenic roads.
- Continue to support the designation of River Road as a Scenic Byway.



Chapter 6

Village Planning

Villages and their smaller counterparts, hamlets can represent a community's culture and heritage, but they can be lost or overshadowed by growth and development. Historic villages are a unique resource, and once lost, they are irreplaceable.

Plumstead retains many of its historic villages. All of its villages are small to medium in size, and functioned mostly as centers of commerce for the surrounding countryside.

The township's history is manifested through these settlements in many ways. Villages like Danboro, Dyerstown, and Point Pleasant contain excellent examples of 18th and 19th century architecture. Villages along historic transportation routes, like the village of Point Pleasant, at one time a ferry landing, remain as evidence of early settlement patterns.

The character and quality of the township would be permanently diminished if small settlements were to disappear, becoming unidentifiable as new development and growth engulf them. While municipalities cannot prevent growth, they can alleviate the effects that development can have on villages through appropriate land use policies and regulations. Additionally, residents can work together to maintain or improve the positive aspects of their village.

Growth pressure in areas adjoining villages may threaten the visual and spatial integrity of the villages and hamlets they contain. Zoning regulations for these areas should be reviewed in light of the potential impacts surrounding development could have on them.

This chapter looks at the major villages of Plumstead Township. It includes background and general information on village planning, a description of each major village in the township, a summary of current issues, directions for future evaluation, when warranted, and planning recommendations. This chapter works in concert with Chapter 5, Historic and Scenic Resources, which focuses in depth on administrative, regulatory mechanisms of protecting properties of cultural significance and recommendations for preservation action.

VILLAGE CLASSIFICATION

A village is a relatively small clustered settlement, often dominated by older homes and other structures. Frequently, the houses are closely spaced on small lots with dwellings set close to the road, establishing the village as an identifiable place.

Lots are typically small or narrow and structures have a pre-20th century origin. Although villages contain historic structures, the development pattern and village elements are the most significant characteristics.

Villages can be generally grouped into three basic categories: hamlets, residential villages, and commercial villages. Hamlets are the smallest type of village, consisting of a few houses located near each other, and having no commercial uses or services. A residential village is the “classic” type of village: a settlement that is mostly residential but also contains community-related services such as a post office or church.

A commercial village is often the 20th century or “motorized” version of a previously residential village. It is a settlement that is largely (and originally) residential in use, but is characterized by commercial uses or service that draw on a broader region for support (e.g., gas stations, antique and furniture stores, restaurants, inns and taverns.)

THE VILLAGES OF PLUMSTEAD TOWNSHIP

Township officials have long been aware of the charm and value of the villages within the township and have taken steps to identify and preserve them. Most of these settlements are covered by village-type zoning districts. In some cases, the more rural land surrounding the village core is subject to agricultural zoning.

This comprehensive plan update supports established village policies and the following analysis strives to continue this proactive planning by strengthening or enhancing the earlier village policies and village elements. The inventory and analysis aims to provide a better understanding of the context and characteristics necessary to formulate appropriate planning policies and regulations.

There are five villages and four hamlets (or village remnants) in the township. The following section describes these villages and outlines conditions and issues that affect them.

PLUMSTEADVILLE

Plumsteadville was originally known as Harts Tavern, but received its present name in 1846. At one time, Plumsteadville was known all over the eastern United States and Canada for the excellent vehicles produced at the carriage, sleigh, and wagon works of Aaron Kratz.

Today, the largely commercial village of Plumstead lies in the northern part of the township, centered on the intersection of Route 611 and Stump Road. While a number of original buildings remain, most notably the Plumsteadville Inn, the village's historic character has been diminished by new construction and alteration of early structures. Some buildings are showing signs of disrepair. Plumsteadville contains many commercial uses including shopping center at the heart of the village at the intersection of Route 611 and Stump Road. The village also contains a mix of single-family residential and apartment buildings. Walkability is a challenge due to heavy traffic volumes through the village and the piecemeal provision of sidewalks.

DANBORO

Until the Revolutionary War, this village was known as Clover Hill because an abundant amount of red clover grew on the surrounding farmlands. Daniel Thomas later renamed the settlement 'Danville,' presumably after himself. The Danville Inn was once a stagecoach stopover. In 1834, the village's name was changed to Danborough, and later shortened to Danboro.

Presently, Danboro is a large residential village surrounding the busy intersection of Point Pleasant Pike and Old Easton Road, in southwestern Plumstead. It includes small-scale apartment buildings and good examples of adaptive reuse of housing into professional offices. No sidewalks are present in the village and walkability within is limited to the roadway medians.

DYERSTOWN

The village was named after John Dyer, a millwright and English Quaker who arrived in Plumstead in 1718. Dyer's Mill may have furnished some of the flour for General Washington's troops when they were camped at Doylestown in June of 1778. Nearly all buildings were built from 1800 to 1870, during the time when most of the village was owned by the Dyer family.

Dyerstown is a well-preserved, residential village in southwestern Plumstead, at the intersection of Old Easton Road and Stony Lane. Its edges are well-defined, and it is a National Register-listed historic district. The stone and frame houses in Dyerstown, which are clustered close to the road, are beautifully restored and maintained. The focal point of the village is the Waterwheel restaurant located near the center of this quaint village. No sidewalks are present within the village.

GARDENVILLE

The focal point of Gardenville has long been the village tavern (presently, the Gardenville Hotel) originally built around 1732 when Durham Road extended to the Tohickon Creek. The village was originally known as Brownsville after Thomas Browne, an English Quaker who was one of the earliest settlers in Plumstead Township. The name Gardenville was later chosen because of the presence of a beautiful flower and vegetable garden cultivated by a neighborhood German woman.

Gardenville is a residential village located at the busy crossroads of Point Pleasant Pike and Durham Road. The tavern/hotel and the Gardenville General Store are the focal points at this intersection. At one time, it was surrounded almost entirely by farmland and open space, but development has advanced into the edges of the village, and newer construction, road improvements, and building alterations have intruded into its historic fabric. There are no sidewalks present in the village.

POINT PLEASANT

Point Pleasant is located along the Delaware River, around the intersection of River Road and Point Pleasant Pike. The village was originally known as Pearsons Landing or Pearsons Ferry because Enoch Pearson established a ferry there in 1739. The village's name was changed to Point Pleasant in 1828 when the first post office was opened. The name was chosen because of the scenic area in which the village is located.

Presently, Point Pleasant is a commercial village that spans the Plumstead and Tinicum township boundaries, although it retains a residential component. The village has been designated as a National Register-listed historic district and serves as an important commercial and transportation center for the surrounding agricultural community and for people traveling up and down the Delaware River. It is one of the largest villages in the township, with some 100 single-family homes and several side streets that converge near the village center. Many of the homes appear to be quite old and are beautifully restored. Among the commercial uses found in Point Pleasant include antique and gift shops, nursery, tavern, general store, automotive repair shop, and river boating and tubing concession. The Delaware Canal Aqueduct, restored to historic presentation, crosses over the Tohickon Creek just east of village center. Walking through the village can be hazardous because of poor visibility and narrow road shoulders.

HAMLETS

There are several hamlets or remnants of villages in the township, including most notably, Curley Hill, along Curley Hill and Park roads west of Route 413; Hinkletown, at the intersection of Durham and Stump roads; Kendigtown, on Danboro-Point Pleasant Pike; and Landisville, on Landisville Road. These small residential enclaves pose no significant preservation planning issues for reasons of size, location, or erosion of historic character.

VILLAGE PLANNING ELEMENTS

Key elements necessary for successful village preservation and enhancement include village entrances, village viewsheds, zoning districts, use and dimensional requirements, design guidelines, and vehicular and pedestrian circulation. The decisions made concerning these factors help to establish a community vision for each of Plumstead's villages.

The following text summarizes these key elements and analyzes how these elements function within the township's villages. A detailed village study can identify specific preservation needs and appropriate regulations to incorporate into ordinance regulations.

VILLAGE ENTRANCE

The entrance is the first image one sees when approaching a village; it will leave a lasting impression. It is important to identify these entrance features so the entrance does not become obscured by its surroundings. The village entrance is one means of identifying the limits of a village along its main thoroughfares.

The entrance to a village is a major element in strengthening the visual identity of the village. The entrance is the perceived edge of the village, a transition point that indicates the presence of a place that is different from its surroundings.

A change in land use character or in the nature of the landscape may be a signal to motorists that they are entering a village and need to reduce speed. Typically, villages have at least one of the following characteristics that can heighten the sense of entry to a village:

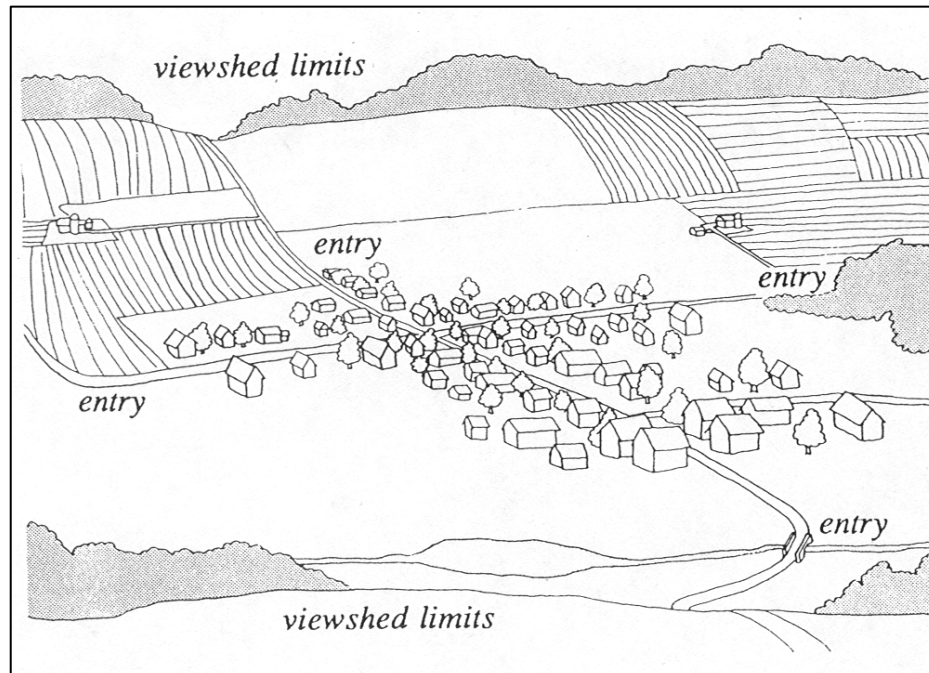
- abrupt change of land use, such as the change from open agricultural land to a tight cluster of buildings in a village;
- change of elevation, such as the crest of a hill or a dip in the road;
- mature trees lining the street;
- lot size and configuration usually small, narrow lots, often in a linear arrangement;
- architecture—buildings of a similar architectural period, located close to the road; and
- village entrance signs.

Various design and planning techniques can be used to enhance or establish an effective entrance, increasing motorists' and pedestrians' awareness that they are entering a small community. This can be achieved through amenities like landscaping, lighting, and pavement detailing. Traffic calming devices like speed humps, raised crosswalks, or textured pavement are also useful in marking the transition from open country to residential and commercial villages, slowing vehicles as they approach.

At present, most primary entrances to villages in the township are unmarked, or marked by a single plain lettered sign. Stylistically compatible decorative historic markers, landscaped where possible, would reinforce the entrances to the villages.

VILLAGE VIEWSHED

The area immediately surrounding the village, known as the viewshed, is another important element to consider in preserving village identity. This surrounding area is known as viewshed. The viewshed is the primary area that can be viewed from most vantage points within the village.



The viewshed starts at the point where the built portion of the village becomes the surrounding landscape and ends at the point where the landscape is no longer readily visible. The size of the viewshed varies with the specific topography, vegetation, and other structures or features of the village's surroundings.

Because the viewshed serves as a transition between the countryside and the village, it is important to minimize or discourage development that will have a negative impact on this area. Alternative types of residential development that preserve the open space of the viewshed should be considered in this transitional area. Township officials have been—and should continue to be—proactive in preserving adjoining farmland or open space providing a natural buffer that retains viewsheds and village integrity.

Cluster and performance standard subdivisions and agricultural uses are methods that serve to protect views and preserve open space around villages. Setbacks, open space, buffer yards and landscaping, singly or often in combination, are other key tools for preserving and demarcating viewsheds.

Integrating or separating new development within the viewshed can also help protect village character. To integrate development, zoning regulations (i.e., use and dimensional requirements) should ensure that new development is consistent with the original village character and functions as an extension of the existing village.

However, if new development is not compatible with the existing architectural style or character of the existing village (e.g., conventional subdivision), a physical separation should be provided between the proposed development and the village so that there is adequate transitional area in the form of an open space or buffer yard. The intent is to protect the viewshed by providing required open space adjacent to the village.

The placement of new structures should be sensitive to both the village and the viewshed and located in the least obtrusive areas. In Plumstead, preserved farmland or other preserved open space often protects village viewsheds. Compatible adjacent development can also function to preserve village character (e.g., traditional neighborhood developments or TNDs). In some cases, adjacent development is additionally subject to historic preservation regulation.

Village viewsheds for the township's villages are not now directly regulated by local ordinances. A village viewshed overlay district is a technique for regulating permitted uses and requiring buffer yards for conventional development within the designated village viewshed. For instance, a village's viewshed can be identified by tax map parcel numbers, and future development on those parcels would have to comply with the established viewshed overlay district regulations.

An evaluation of the villages can be conducted to determine if a village viewshed overlay district is appropriate. These village preservation and enhancement techniques will afford these village resources and outlying areas greater protection from incompatible future development. For instance, much of the area surrounding Gardenville has been developed with conventional single-family residential subdivisions. For the remaining undisturbed areas adjacent to the village, a common vision should be considered of how this area should develop in the future and whether a village viewshed overlay district is appropriate.

ZONING DISTRICTS

The perception of what constitutes a village varies. Typically, a village is viewed as a small, concentrated settlement that is dominated by older single-family homes, interspersed with nonresidential buildings such as businesses, churches, and post offices. The structures are usually spaced closely together, at crossroads, capturing the image of the village as an identifiable place. But since villages are not incorporated, they do not have fixed edges. Thus, the most commonly used mechanism for delineating the limits of a village is establishing a village district boundary.

The township zoning ordinance has two types of village zoning districts: VC—Village Center and VR—Village Residential. The stated purpose of the VC District is to encourage a mix of residential and nonresidential uses and a scale of development that will “enhance and replicate traditional village development.” The encouragement of traditional residential village development is implicit, but not made explicit, in the statement of purpose for the VR District.

The two village-type zoning districts support historic preservation by permitting uses and setting development standards consistent and compatible with those of the township's historic villages. The VC District encompasses Danboro, Point Pleasant, Plumsteadville and a small part of Gardenville. Most of Gardenville and all of Dyerstown lie within the VR District. The Twin Silo Road potential historic district lies within the low-density RO Rural Residential District.

Based upon field surveys and maps, it appears that the present village zoning district boundaries are appropriately located for the township's villages. This is important in marking the transition from environs to village, in maintaining the definition of the village, and in protecting its scale and fabric if structures are expanded, built, or rebuilt. To further define village boundaries, it may be desirable to add provisions to the subdivision and land development ordinance (SALDO) requiring hedgerow or other suitably landscaped buffers adjoining preserved farmland and open

In the case of Gardenville, the VC district boundary corresponds to a portion of the Gardenville – North Branch Historic District in the vicinity of crossroads of Danboro-Point Pleasant Pike containing the village tavern/hotel and general store. The VR district, however, extends outside the historic district—from the VC district northeast along Danboro-Point Pleasant Pike—and contains newer construction on small lots. There are little if any historic structures in the VR district but the smaller lots with buildings generally concentrated closer to the road typifies the historic settlement pattern. Recent adjoining development has begun to encroach on historic character. Gardenville's village district boundaries should be reviewed and revised as necessary to enable better preservation.

USE AND DIMENSIONAL REQUIREMENTS

If the mass, scale, or nature of proposed buildings and/or uses are incompatible with those of the existing building and uses in a village, the historic character and integrity of a village may be undermined. As noted, the township uses two main zoning districts within its villages: VC and VR.

The VC district permits a suitably circumscribed range of residential and nonresidential village-type uses. The VR District provides for single-family housing and other development at a scale compatible with villages. This district is appropriate for predominantly residential villages and for residential areas near village centers, where it typically applies.

Permitted residential uses in VC Districts include single and two-family homes, apartments and townhouses. Also permitted are farms, a number of institutional uses, professional offices, village-type shops, and other less intensive commercial uses. The minimum residential lot area is 7,500 square feet. The VC District is more permissive than the VR District in terms of permitted nonresidential uses.

Allowed by conditional use in the VC District are land preservation subdivisions in which transferable development rights are used to increase the density to a maximum of 7 units per acre. This is useful for infill or adjoining development.

VR Districts allows only single, two-family, and apartment housing by right, as well as several institutional uses. The minimum residential lot area is 10,000 square feet. Land preservation subdivisions are also allowed in this district by conditional use.

Based upon a cursory review, it appears that the area and dimensional requirements for the VC and VR districts are generally appropriate for the village context. The zoning ordinance contains provisions that require mixed uses (which may, however, be entirely residential) in developments of more than 5 or 6 lots in each village-type district. The range of uses should be reviewed to expand provisions for mixed use that may include residential and nonresidential within the one building (e.g., apartments above office and/or retail uses). A mix of residential and nonresidential uses also could be a component of Traditional Neighborhood Development (TND) provisions to promote compact, pedestrian-oriented development forms in the VR and VC districts. The *Comprehensive Historic Resources Plan* recommends evaluating the zoning ordinance for addition of TND options in Danboro and Plumsteadville, but a TND could also be useful within or adjacent to all villages for not only retaining the internal scale and design of the village, but in promoting compatible development nearby.

Public open space in villages often takes the form of a “town square” or village green, which enhances pedestrian activity, visual appeal, and public use of strategically located open space. The provision of landscaping, benches, outdoor art, and other amenities adds to the appeal of such public spaces. Development standards for the VC and VR districts now omit open space requirements.

Adaptive reuses are generally subject to special exception in both village zoning districts. Adaptive reuse is the conversion of a historic property for a purpose other than the one for which it was originally built, which ordinarily involves interior renovations that leave intact the building’s exterior appearance, accompanied by a change of use. Adaptive reuse provisions in the Plumstead zoning ordinance allow residential and bed-and-breakfast conversions that favor the conservation of large older homes. Additional village-oriented uses with potential to aid adaptive reuse—such as libraries, places of worship, small shops, museums, professional offices, day care centers, schools, and inns—are allowed in the VR District, some by right and others by conditional use or special exception. Village district regulations should also be reviewed for appropriate ways to further encourage adaptive reuse of obsolete buildings.

An evaluation of new and proposed development activity in and around the villages may prompt municipal officials to revise or amend the use and dimensional requirements. Integrating these

elements, along with the provision of public open space, can help to create a sense of community and provide an opportunity for social interaction among residents.

DESIGN GUIDELINES

Design guidelines can be used to help guide the design and layout of proposed development to be compatible with prevailing village characteristics. The guidelines address architectural, design and visual considerations. The zoning ordinance includes a provision for township review of architectural design for proposals in the VC and VR districts, but officials may wish to review and supplement those provisions with a set or sets of guidelines applying to individual villages as shown in the box on the following page.

VEHICULAR CIRCULATION

Vehicular traffic is a major factor in defining village character. Over the years, roads along which the villages developed have become major transportation routes. The crossroads, which were once the focus of and reason for the development of the village, have become automobile-dominated rather than pedestrian-oriented, destroying the very elements that comprise the villages' unique quality.

Due to increased traffic volume, the villages are becoming increasingly vulnerable to commercialization and alteration. It's not surprising that many motorists commonly pass through a village without noticing the unique settlements through which they routinely travel. So, it's increasingly important that villages make a strong visual impression in order to retain their identities in a changing landscape.

The degree to which a village has maintained its character depends to a great extent on how severely pressured the village has been by increased traffic, and how that pressure was or is being handled. All too often the priority has been to maintain fast, efficient traffic flow at the expense of the village.

Typically, roads are widened to accommodate traffic volume, and in the process, space for pedestrian circulation is reduced or eliminated and street trees may be removed. All of those actions serve to erode village character.

SAMPLE VILLAGE DESIGN GUIDELINES

Village design guidelines are intended to provide supplemental provisions in the subdivision and land development process while providing developers with a preferred vision for future development. The following are sample design guidelines that can assist municipal officials in reviewing and developing recommendations on conceptual site and architectural plans as part of the site review process for proposed development within or adjacent to the village.

- Along with the subdivision and land development plan, the applicant shall submit for review architectural drawings for each building and/or addition or renovation.
- Alignment or orientation of a proposed building should be related to the prevailing orientation of adjacent existing buildings.
- All new buildings shall be related harmoniously to the terrain (natural features) and to existing buildings and streets.
- The relationship between the width and height of the front elevations of adjacent buildings should be considered in the construction or alteration of a building.
- Single rectangular-shaped buildings with undifferentiated facades should be avoided. Massing should be broken up through the use of gables, indentations, variation of rooflines, and other design techniques.
- Individual nonresidential buildings should be designed to reflect the scale of the existing village.
- If more than one business is located in a building, the exterior of the building should be unified in design treatment (i.e., design of windows and door opening, use of materials, signs, and color).
- New construction or renovations should be of similar architectural style to the established village and compatible with that of existing or adjacent properties.
- Building additions should be designed to reflect the character of the existing building in terms of scale, materials, fenestration, and color whenever possible.
- Period light fixtures and streetscape amenities (e.g., benches, sidewalks) that are compatible with historic village architecture should be required.
- The organization of the building(s), streets, drives, parking areas, pedestrian walks, service areas, and other site components should have a functional, safe, and harmonious relationship and be compatible with existing site features and adjacent areas.
- Provide an interconnected (grid) street network that emulates a traditional neighborhood.

As discussed in the Transportation chapter, the provision of traffic calming techniques to slow or reduce motor vehicle traffic to improve safety for pedestrians and bicyclists can be an effective measure that could be useful within a village setting. Traffic calming measures may include speed humps, speed tables, planted medians but other techniques such as street tree planting and providing parallel parking in appropriate locations can also function to alert motor vehicles that they are entering village area and need to reduce traffic speeds.

The Transportation chapter also discussed the use of a reverse frontage road through the use of an Official Map. To promote access management, the Official Map provides a legal means for designating locations of future public facilities.²⁴ The use of an Official Map could be used for the reservation of future roads and sidewalks within village areas. The feasibility of providing a reverse frontage road along the Route 611 corridor in the area of Stump Road, west of their intersection, should be explored as part of developing an access management plan. The backdoor Stump Road to Route 611 road connection could be extremely useful by diverting a portion of the traffic stream that would otherwise flow through the center of Plumsteadville, enhancing walkability within the village, especially along Stump Road, which has lower traffic volumes.

PEDESTRIAN CIRCULATION

Pedestrian circulation, or the lack of it, is also a problem common to villages. The increased volume and high speed of traffic has made walking uncomfortable and unpleasant at times.

Properly designed pedestrian circulation systems are important for the safety and convenience of village residents, and as a unifying element within the village. Therefore, sidewalks, pedestrian paths, or improved road shoulders may merit installation within some villages, particularly in areas of walking scale, mixed or commercial use, and high traffic volume. Based upon the current conditions (e.g., narrow shoulders, limited sight distance, and roadside swales) not all villages are currently walkable nor should resources be devoted for this purpose now or in the near future. However, in villages where there is heavy foot traffic, township officials should consider the provision of sidewalks in these areas for pedestrian safety.

²⁴ The adoption of an Official Map does not by itself establish a street, nor does it imply that the municipality has taken the land. That must still be accomplished through a mutual agreement, municipal purchase, or condemnation of the land through eminent domain procedures.

FOCUS ON PLUMSTEADVILLE

Plumsteadville's size, predominantly commercial flavor, and location at an intersection on an arterial road lend it great potential for serving as a focal point of the community, a natural focus of activity. The village also has key historic resources in need of revitalization. Township officials have expressed the desire to see its potential as a central place fully realized. Promoting Plumsteadville as a hub or town center could involve the installation of better walkway connections within the village (with an emphasis along Stump Road due to lower traffic volumes), an analysis of additional parking opportunities (e.g., utilization of vacant lands and parallel parking spaces), and the provision of a central focal point or village green. Consideration could be given to extending the VC—Village Center zoning district northeast along Stump Road to the municipal building, into what is now the VR—Village Residential District, as a means of promoting mixed use and infill development in an expanded village.

Consideration should be given to conducting a village study of the Plumsteadville area that would take into account the issues highlighted in this section, and other concerns, and serve as the framework for future village/town center planning.

SUMMARY OF RECOMMENDATIONS

- Conduct a village study for Plumsteadville to evaluate its potential as a town center. Study contents could include an assessment of the suitability of current dimensional standards and zoning designation to compact, mixed-use town center development; examination of directions for potential infill development; recommendations for pedestrian and road improvements; ways to improve visual cohesion and signage; provision of a village green, landscaping and street furniture; and consideration of historic overlay zoning and design guidelines to protect resources.
- Conduct a village study for Gardenville to evaluate the appropriateness of the village zoning district boundaries and identification of the village viewshed and appropriate protection measures.
- Consider a joint village study for Point Pleasant with Tinicum Township to explore compatibility of zoning and land use, historic and open space preservation, walkability and traffic calming, among other concerns.
- Consider using decorative markers and landscaping where possible to mark all primary village entrances. The historical marker grant program of the Pennsylvania Historical and Museum Commission may be a source of assistance for this activity.
- Continue to protect villages and their viewsheds by encouraging participation in farmland and open space preservation programs by owners of property adjoining villages and their viewsheds.

- Evaluate the township's villages to determine whether the provision of a village viewshed overlay district is appropriate.
- Examine the feasibility of providing traffic calming techniques for village areas.
- Consider the use of an Official Map for the provision of a reverse frontage road to provide a connection between Stump Road and Route 611 within Plumsteadville.
- Review buffering requirements in the subdivision and land development ordinance to see whether hedgerows or other forms of landscaped buffers should be required at village district boundaries. Continue to enforce existing buffering standards for farmland and open space.
- Review VR and VC zoning district to ensure appropriateness of uses and dimensional standards. The review should include consideration of these specific areas:
 - new uses or adjustments to existing standards to further promote adaptive reuse of historic buildings;
 - open space standards;
 - TND provisions; and
 - provision of mixed use (residential/nonresidential) within one building.
- Evaluate ways of improving pedestrian mobility and connectivity in areas of heavy foot and vehicular traffic, or in other cases where the need for such improvements exists (e.g., Plumsteadville, Point Pleasant).



Chapter 7

Community Facilities

Community facilities and services are necessary to maintain the health, safety, and social needs of communities and are important factors that can enhance or detract from the quality of life in a community. Planning for community facilities and services, whether they are provided by public, private, or nonprofit entities, should be interrelated and consistent with land use planning in the comprehensive plan.

In the survey taken for the comprehensive plan, residents expressed an overall high level of satisfaction with the provision of most services in the township. In fact, about 68 percent of the respondents rated overall township services as good or excellent.

The following community facilities and services are covered in this chapter:

- Water Supply and Protection
- Stormwater Management
- Wastewater Facilities
- Solid Waste Management
- Township Administration
- Public Works
- Police Services
- Fire Protection Services
- Emergency Medical Services
- Health Care
- Educational Facilities
- Libraries
- Utilities
- Telecommunications

Overall, it appears that the present community facilities and services are generally adequate to serve current and future needs for the next 10 years in the township.

WATER SUPPLY AND PROTECTION

Water supply planning addresses two primary factors: maintaining the supply of water and protecting its quality. The Pennsylvania Municipalities Planning Code directs municipalities to consider water facilities in municipal comprehensive planning, zoning and development review functions. Section 301(b) states that the comprehensive plan shall include a plan for the reliable supply of water, considering provisions adequate to protect water supply sources. Any such plan should be consistent with the State Water Plan and other applicable water resources plan adopted by a river basin commission.

GOAL OF WATER SUPPLY PLANNING

The goal of water supply and water facilities planning, at the local level, is to establish community objectives and public policy to conserve, enhance, and manage water resources. Effective planning to protect water resources and to ensure an adequate supply of drinking water requires coordination and commitment between existing and future infrastructure planning, land use planning and development, and the protection of natural resources and environments.

Plumstead Township promotes a comprehensive water supply planning process to achieve the following requirements:

- Ensure that adequate and safe drinking water is available to all citizens;
- Encourage, promote, and protect all other beneficial uses of the Commonwealth's water resources;
- Enhance the quantity and quality of surface water and groundwater resources;
- Integration of water supply, sewage facilities, stormwater management, and land use planning; and
- Encourage, promote, and develop incentives for alternative water supply solution strategies including, but not limited to, structural improvements, systems upgrades, new source development and management solutions such as coordination with other entities.

WATER QUANTITY

Various communities are faced with the challenge of addressing potential water supply issues resulting from over withdrawal and diminishing surface and groundwater resources. Management of these resources as sources of potable water is closely related to land use and wastewater facilities planning.

While many creeks and tributaries flow through Plumstead Township, groundwater is the primary source of potable water for residents. Surface water is only used in a limited capacity in conjunction with groundwater sources that serve the residents of Patriots Ridge. Surface water from the Delaware River is withdrawn by the Point Pleasant Pumping Station but is not a water source for Plumstead residents. This source serves customers in other parts of Bucks County and portions of Montgomery County.²⁵ Groundwater supply is obtained through the public water system from Bucks County Water and Sewer Authority (BCW&SA) as well as private and community wells within the township.

²⁵ The Point Pleasant Pumping Station is owned and operated by the North Wales and North Penn Water Authorities. The Pump withdraws surface water from the Delaware River, which is temporarily stored in the Bradshaw Reservoir (along Bradshaw Road), and then diverted westward to its destinations. In addition to supplying potable water to customers in Bucks and Montgomery counties, it delivers cooling water to PECO Energy Company's Limerick nuclear power plant in Montgomery County under certain conditions.

As discussed in the Natural Resource and Natural Systems chapter, there are various geologic formations underlying Plumstead, some which are reliable sources of groundwater such as the Stockton and Brunswick formations and others which have limited capacity and such as the Lockatong Formation and Diabase areas.

COMMUNITY WATER SYSTEMS

Plumstead Township provides water service for residential and commercial and industrial customers within the township. The township's Department of Public Works operates five (5) public major community water systems which service more than 2,000 customers. The township has hired Private Utility Enterprises to oversee the operation of the water supply systems, which includes well testing and pump monitoring. The township's water supply system is comprised of the following systems based upon the communities they serve:

- Cabin Run/Landis Greene
- Country Greene/Windtree /Timberly Farms
- Durham Ridge/North Branch
- Summer Hill/Summer Meadow
- Patriots Ridge

The Cabin Run Water System serves Plumstead residents in the Cabin Run and Landis Greene developments and a limited number of residences and commercial businesses within the village of Plumsteadville. The public water supply serving this system relies on groundwater sources located in the Cabin Run development.

The Country Greene Water System serves Plumstead residents in Country Greene, Windtree, and a portion of Timberly Farms developments. The public water supply serving this system relies on groundwater sources located in the Country Greene development.

The Durham Ridge Water System serves Plumstead residents in the Durham Ridge and North Branch developments. The public water supply serving this system relies on groundwater sources located in the Country Greene development.

The Summer Hill Water System serves Plumstead residents in the Summer Hill and Summer Meadow developments. The public water supply serving this system relies on groundwater sources located in the Summer Hill and Summer Meadow developments.

The Patriots Ridge Water System serves Plumstead residents in the Patriots Ridge development. The public water supply for this system is purchased water from the Doylestown Township Municipal Authority (DTMA). It is a combination of ground and surface water.

All the above community water systems appear to be functioning adequately. In the first quarter of 2011, the project to interconnect two of these systems (i.e., Country Greene/Windtree/Timberly

Farms and Cabin Run/Landis Greene water systems) went out to bid. The interconnection of water facilities provides alternative sources of supply and strengthens the reliability of all included systems. Interconnections between systems or adjacent water suppliers are advisable at a minimum for emergency service. Interconnection is a less costly option to increasing supply or facility expansion, and also reduces stresses placed on supply sources and is a practical trend towards a more comprehensive planning approach of managing water supply sources.

Locally, DTMA distributes groundwater pumped from 13 wells within Doylestown Township and one well in Plumstead Township and may receive groundwater via an interconnection with Doylestown Borough Water Department and a blend of surface and groundwater via an interconnection with North Penn Water Authority (NPWA).

The DTMA maintains five storage tanks with a combined storage of 1.75 million gallons of water to meet the peak demand for domestic needs and fire suppression services. This system is interconnected to the North Penn and North Wales Water Authorities for surface water. Interconnections are maintained with several independent systems such as the Pine Run Community. The benefits of interconnection provide supply and/or backup water sources and reduces the need for duplication of facilities, such as storage tanks.

In 2010, Cross Keys Development District water system was added to serve portions of Buckingham, Plumstead and Doylestown Townships. The DTMA owns and operates the public water system of the Cross Keys Place Shopping Center in Plumstead Township. This ground water system serves residential and commercial properties in the Cross Keys area with a standalone well and storage tank. The Cross Keys Water Service District contains the Patriots Ridge development. The DTMA supplies water to Plumstead Township Water Department which then supplies water to Patriots Ridge residents. This district includes an area of the Plumstead Township having been identified as having contaminated groundwater. Doylestown Township has agreed to serve as the lead agency in a joint effort with PADEP, Buckingham Township and Plumstead Township to construct a public water system in the Cross Keys Area to facilitate the supply of safe potable water to certain landowners.

Plumstead Township should continue to work with DTMA to ensure a safe, adequate, potable supply of drinking water to township residents and to ensure additional flow from the Patriots Ridge Water System (Cross Keys Water Service District) if required for emergencies such as fire protection. Plumstead Township should also continue to coordinate efforts with surrounding municipalities to provide interconnection of water systems.

SAFE YIELD AND SUSTAINABILITY

Sustaining a proper regional water balance is a vital component of Plumstead Township's comprehensive plan. Under natural conditions, there is a balance between the volume of water

entering or recharging an aquifer and the volume of water being discharged from an aquifer. Protecting the environment and water resources requires consideration of the entire water cycle. Periodic assessment of water resources and service areas is necessary to ensure that adequate facilities can be provided to satisfy future development needs. General water supply planning principles comprise the foundation that public water service should be considered as having finite capacities and should be provided in areas where they are needed to implement the community's planning policies. Service should not be provided outside of intended service areas until uses within these areas are fully served and municipal officials determine that expansion of development areas and service areas are warranted.

To protect water resources from depletion, the amount of water withdrawn from a source should be based upon the safe-yield of that source. The safe-yield is the maximum sustainable volume of water which can be withdrawn from a source beyond the recharge capacity of the source. Determining the safe yield can be difficult but can be looked at on a site by site basis water budget. In order to determine the volumes of water that can be considered safe-yield, Plumstead Township should undertake detailed water resources studies. These studies should be used as decision making tools, allowing Plumstead to take a pro-active approach to water resources management and conservation.

At the regional level, the lead agency in groundwater protection is the Delaware River Basin Commission (DRBC). In 1980, the DRBC delineated and established groundwater-protected area regulations for portions of southeastern Pennsylvania where the potential for groundwater shortages has been identified. This area encompasses the majority of Bucks County (34 municipalities) including Plumstead Township. In the ground water protected areas, more stringent regulations apply to ground water withdrawals than they do in the rest of the Delaware River Basin. The DRBC recommends the reduction of water consumption through the use of conservation devices, which should be implemented by municipalities through building codes. DRBC also encourages municipalities to monitor public and private water use to determine each community's sustainable groundwater yields.²⁶

²⁶ Groundwater-protected area regulations apply to new or enlarged daily withdraws of 10,000 gallons or more involving municipal, public, industrial and commercial water suppliers. Groundwater withdrawals in excess of 10,000 gallons per day (gpd), within this special groundwater protection area, require the approval of the DRBC and issuance of an application.

Water withdrawal applications must be of demonstrable need and withdrawals must not interfere with the performance of existing supply wells, or as a whole, or exceed the safe yield of the source aquifer. In addition, monitoring of groundwater withdrawals of less than 10,000 gpd is encouraged at the municipal level. In municipalities outside of these groundwater-protected areas approval is required from the DRBC for water withdrawals exceeding 100,000 gallons per day.

GROUNDWATER STUDY

The *Plumstead Township Groundwater Study* conducted by Earth Data Northeast, Inc., completed in 2008, documented the impact of water use changes in the township utilizing a three-step process that identified current conditions and created a model to assess additional sewer connections and the impact of pumping township wells at DRBC maximum allocations. In addition, a long-term monitoring program was established to evaluate potential changes in ground water and surface water conditions in response to the pumping of the production wells and residential wells within the township. Thirty-one (31) wells currently comprise the ground water monitoring network.

The principal findings of the *Groundwater Study* were as follows:

- The geologic formations underlying the township exhibit limited porosity and permeability. The degree of fracturing and interconnectivity of secondary openings within the bedrock is limited. These structural limitations need to be considered when evaluating the township's available groundwater resources.
- Soil is composed of particles of broken rock that have been altered by chemical and environmental processes that include weathering and erosion. The bedrock formations that underlie the township weather to soils and contain high clay content. These conditions result in low groundwater recharge rates.
- Despite the low recharge rates resulting from the characteristics of the geologic conditions underlying the township, the export of groundwater via the BCWSA sewer system at the quantities contemplated by the Stipulation and Agreement will have a minimal impact on the groundwater resources of the township.

Based on the results of the *Groundwater Study*, the following recommendations are offered:

- The township should continue to explore for and develop additional supply wells. New wells should be large diameter to expose and develop fractured zones.
- The township should anticipate that future groundwater appropriation permit applications and monitoring data from existing wells will receive significant technical evaluation from regulators relative to potential well interference concerns and recharge.
- The township should continue discussions with Doylestown Township Municipal Authority relative to the amount of supply available through the existing interconnection for emergency situations.²⁷
- The township should increase its above-ground storage capacity.

A numeric model was developed as part of the groundwater study to document baseline conditions relative to water levels, recharge, and other data. The model may also be used to monitor changes in these parameters to evaluate potential future impact to the township's groundwater resources resulting from increases in the transport of wastewater out of the township via the BCWSA system.

²⁷ The original text contained in the *Plumstead Township Groundwater Study*, completed in 2008 by Earth Data Northeast, Inc., referenced the interconnection with the Doylestown Borough Authority but the correct text should read the Doylestown Township Municipal Authority. This change has been reflected in the narrative.

Also in 2008, the township entered into a stipulation and agreement (S&A) with Bucks County Water and Sewer Authority (BCWSA) regarding sewer systems within the township. The purpose of the S&A was to confirm the agreement the township and BCWSA have regarding implementation of public sewer service within the township (see Wastewater Facilities chapter for more details on wastewater facilities in the township). The final agreement contains well guarantee provisions that protect against well depletion linked to future development tied to public sewers.

The township requires new residential housing units within the Sanitary Sewer District to demonstrate the infeasibility of using individual in-ground, on-lot sewage disposal systems on each individual lot to maintain groundwater recharge before connecting to BCWSA. Lack of feasibility does not include the inability to maximize density due to the availability of public sewer. A landowner within the newly established sewer district cannot maximize the development potential of a parcel if the soils are poor. This provision in the S&A protects against increased density as a result of the availability of public sewers. Amendments made to the settlement require BCWSA to pay for drilling new wells for any residents near new developments whose wells go dry as a result of new sewerage.

Moving forward, groundwater resource development, conservation and management will need to be a continuing concern for the township. The township will need to continue to evaluate changes in response to increased pumping of existing wells, adding new supply wells or increasing the amount of water exported out of the township via sewers.

WATER QUALITY

Groundwater quality may be compromised by uses and activities being conducted in the township. Some land uses and activities are more compatible with maintaining good water quality than others. Common sources of groundwater contamination are listed below:

Table 29
Common Sources of Groundwater Contamination

Category	Contaminant Source	
Agricultural	Animal burial areas Animal feedlots Fertilizer storage/use	Irrigation sites Pesticide storage/use Manure spreading areas/pits
Commercial	Auto repair shops Construction areas Car washes Cemeteries Dry cleaners Gas stations Golf courses	Laundromats Paint shops Photography Railroad tracks and yards Research laboratories Scrap and junkyards Storage tanks
Industrial	Asphalt plants Chemical manufacture/storage Electronics manufacture Foundries/metal fabricators Machine/metal working shops Mining and mine drainage	Petroleum production/storage pipelines Septage lagoons and sludge Toxic and hazardous spills Wells (operating/abandoned) Wood preserving facilities
Residential	Fuel oil Furniture stripping/refinishing Household lawn chemicals Household hazardous products	Septic systems, cesspools Sewer lines Swimming pools (chemicals)
Other	Hazardous waste landfills Highway spills Municipal incinerators Municipal landfills Municipal sewer lines Open burning sites	Recycling/reduction facilities Road deicing operations Road maintenance depots Stormwater drains/basins Transfer stations

Source: Adapted from US EPA. 1991. *Protecting Local Groundwater Supplies through Wellhead Protection*

The Federal Safe Drinking Water Act (SDWA) of 1974 ensures the quality of drinking water and its sources (rivers, lakes, reservoirs, springs, and ground water wells). In 1986, under SDWA, the U.S. Environmental Protection Agency (EPA) set standards for drinking water quality to prohibit exceeding maximum contaminant levels (MCLs) and oversaw the states, localities, and water suppliers who implement those standards. At the regional level, the lead agency in groundwater protection is the Delaware River Basin Commission (DRBC), which monitors the water quality of public supplies and enforces the water quality standards set by federal and state agencies.

The role of the Bucks County Department of Health (BCDH) is to ensure that water system facilities are properly designed, constructed, operated, and maintained for protection of public health. The BCDH conducts initial well testing and provides recommendations to PADEP for treatment and/or alternative solutions if contamination is found. The BCDH also oversees water management for sewer and water plants regarding industrial water discharge. However, private water supplies are owned and operated by individual property owners and the quality of the private water supply is the responsibility of the respective property owner. State laws do not require testing of private

domestic water supplies and regulatory agencies do not regularly monitor the quality of private supplies.

In 2005, the Bucks County Department of Health (BCDH) began certifying new private wells to help prevent residents from drinking contaminated water. The BCDH's Rules and Regulations Governing Individual Water Supply Systems apply to new, not existing wells. One of the key components of the program is to certify that each well has a proper sanitary seal that can safeguard against groundwater contamination. While the well inspection will only occur at the time a well is constructed, it is recommended that property owners that rely on private wells have them tested every year or so to make sure they are safe.

SOURCE WATER PROTECTION / WELLHEAD DELINEATION

Specific responsibility of municipal water departments, authorities, and private water suppliers includes assuring a continuous supply of safe and potable water to the consumer. These entities test the water supply to ensure the water meets or exceeds state and federal standards for both appearance and safety. Under Federal law and amendments to the State Safe Drinking Water Act, states are required to develop a Source Water Assessment and Protection (SWAP) Program to assess drinking water sources for susceptibility to pollution and to support voluntary, community-based barriers to drinking water contamination. Components of local, Source Water Protection Programs (SWPP) include delineation of a Source Water Protection Area (SWPA), Groundwater and Surface Water Protection Areas; a Potential Contaminant Source Inventory (a.k.a. Potential Sources of Contamination (PSOCs) and ranking of these sources according to the threat posed to surface and groundwater supplies; and a Susceptibility Analysis of Drinking Water, Groundwater and Surface Water Sources to Contamination. Amendments to the Safe Drinking Water Act of 1986 also require states to develop a wellhead protection program (WHPP) to protect the quality of groundwater through local land use controls. A Wellhead Protection Area (WHPA) is defined as the surface and subsurface areas surrounding a well or wellfield supplying a public water system through which contaminants are likely to move toward and reach the water well or wellfield.

PADEP recommends three zones of protection within WHPAs:

- Zone 1 – Protective zone (400 feet radius) around a well
- Zone 2 – A 10–Year Time-of-Travel Capture Zone around a public water supply well
- Zone 3 – Zone of Contribution – Land surface providing a recharge area to sustain the yield of a protected public water supply well

In 2009, Pennsylvania Department of Environmental Protection (PADEP) developed a program of technical support services known as Source Water Protection Technical Assistance Program (SWPTAP) to assist communities and public water suppliers in the state with their efforts to protect public drinking water sources.

SWPTAP is being implemented by the PADEP Regions with support provided through contractors and subcontractors. Community water systems, municipalities and/or groups of municipalities are eligible for SWPTAP assistance. PADEP staff will help develop a Scope of Work, and PADEP funds the technical resources. They look to public water suppliers and municipalities to provide commitment and “in kind” services. SWP programs can involve wellhead protection for groundwater systems, watershed protection for surface water sources, or both for systems using both ground water and surface water.

SWPTAP projects include:

- Detailed mapping of critical recharge areas;
- Updated potential contaminant inventory (PSOCs)
- Updated Risk assessment
- Public education programs
- Emergency response measures
- New water source planning
- Protective ordinances

SWPTAP continues the effort begun years ago by WREN, Pennsylvania Rural Water Association, and the DEP SWP Grants program to develop Source Water Protection Plans by offering technical services.

Municipalities can develop and implement source water protection plans in collaboration with water suppliers. These plans are regulated by ordinance and establish the siting, drilling and abandonment of groundwater wells. Plumstead Township would benefit from preparing and implementing a SWPP and wellhead protection overlay zoning district to protect critical water resources. Impact studies and well depletion agreements are required where new development affects groundwater resources. Federal and state regulations, coupled with additional resource management at the local level, can reduce the incidence of groundwater pollution. Although the township does not presently have a Wellhead Protection Ordinance to regulate certain uses and activities within certain zones measured outward from public water supply wells, the township is exploring the possibility of preparing a study to define the zone limits, so that an ordinance could be adopted in the future.

LOCAL ORDINANCE PROVISIONS

Plumstead Township is concerned with water supply issues related to water quality and water quantity. The township has adopted ordinances regarding well drilling, groundwater protection, drought contingency plans, and water conservation devices as described below.

GROUNDWATER RESOURCES

Plumstead Township's Groundwater Ordinance, No. 2004-04, requires all subdivision and/or land development which involve a proposed groundwater withdrawal of one thousand (1,000) gallons per day or more, or onsite wastewater disposal of one thousand (1,000) gallons per day or more, or involve three (3) or more lots (including existing lot(s) to implement a hydrogeologic investigation and prepare a report of findings for review and approval by the township. The hydrogeologic investigation report must be completed by or under the supervision of a professional geologist with experience in the practice of hydrogeology. In addition, all applications should comply with the requirements of the Plumstead Township Well Ordinance No. 2004-05.

NEW WELLS

Section 26-201, *Purpose, Jurisdiction, Definitions and Applicability* of the municipal code contains provisions to ensure that new wells constructed in Plumstead Township provide a reliable, safe and adequate water supply to support intended uses within the capacity of available groundwater resources. Additionally, this ordinance ensures that new wells do not infringe upon the performance of existing wells and provides for the collection of accurate groundwater information.

WELL DRILLING

Section 26-202, *Well Drilling Permit* of the municipal code requires a permit for any well drilled in Plumstead Township and completion of well registration. The quality of the water must be tested after any well has been drilled and if the drinking water does not meet drinking water standards, the water must be treated to meet these standards. Well drilling and testing permits are categorized by Classes I, II and III defined as follows:

1. Class I wells pump less than 1,000 gallons per day. The drilling of the well and the testing of the water must be completed and the well must meet zoning ordinance requirements before a building permit is issued by the Township.
2. Class II wells pump 1,000 gallons per day or more in the aggregate.
3. Class II wells also include a well or wells where the aggregate withdrawal is up to 10,000 gallons per day. Depending upon the number of lots or dwelling units served or groundwater withdrawn, the application may be subject to the Pennsylvania Safe Drinking Water Act as Public Water Supplies (PWS).
4. A Class III well or wells include wells that produce an average of more than 10,000 gallons per day over a thirty-day period and are subject to approval by the DRBC and PADEP.

PUMPING TESTS

Section 26-203 H, *Pumping Tests* of the municipal code requires pumping tests for Class I and Class II wells and specifications for drilling testing. Class I Wells require a short-term pumping test. Class II and Class III wells require a long-term pumping test in accordance with the requirements and procedures set forth in the Groundwater Ordinance.

WATER IMPACT STUDIES

Plumstead Township zoning ordinance Section 27-2319, *Impact Studies*, requires water impact studies, as required by the township's Subdivision and Land Development Ordinance. Any study shall be conducted in accordance with the requirements of the township's Well Ordinance.

DROUGHT EMERGENCY

Section 26-302, *Declaration of Drought Emergency* of the municipal code permits the Board of Supervisors, upon the recommendation of the township Water Commission, Water Department or the township water consultant, to determine that a drought emergency exists in the township which warrants the imposition of mandatory water use restrictions. Article III, Section § 26-303, of the zoning ordinance, *Water Use Mandatory Restrictions: Prohibited Nonessential Water Uses*, states that once a drought emergency is declared, nonessential uses of water are banned.

WELL DEPLETION

Section 26-204, *Well Depletion Agreement* of the municipal code requires applicants seeking approval of a permit for a Class II or Class III well to enter into a Well Depletion Agreement with Plumstead Township. The agreement applies to all existing wells within 1,000 feet of the site that is depleted to such an extent that the supply is no longer adequate for their owner's needs. If it can be shown that the depletion is caused by the well(s) servicing the applicant's development, it is the applicant's responsibility to restore an adequate supply by deepening the depleted well, drilling a new well or connecting the affected property to a public water supply.²⁸

WELL CONSTRUCTION AND YIELD

Section 26-203 A, *Well Construction Requirements*, of the municipal code contains the following requirements:

1. Individual On-Lot Wells and Others require preparation of drilling record and geologic log to include detailed lithological description, depth and yield of water-bearing zones.

²⁸ Wells are grouped into two categories: individual on-lot wells and wells that propose to pump up to 10,000 gpd. Some of these wells will require a permit from the Pennsylvania Department of Environmental Protection (PADEP). Large-yield wells or wells that propose to pump more than 10,000 gpd, on a thirty-day average, and/or wells that are proposed for dedication to the Township require a permit from the Delaware River Basin Commission (DRBC) and the PADEP.

2. Yield Wells require Class I wells to have a minimum yield of six gallons per minute (gpm), of which four gallons can be obtained from storage. A minimum of two gallons must be obtained from aquifer contribution and only contribution from water-bearing zones located at a depth of 200 feet or greater will be considered. Contribution from water-bearing zones encountered above 200 feet will not be included in the computation. The yield requirements for Class II and Class III wells shall be determined in accordance with the procedures outlined in the Groundwater Ordinance.

This section of the zoning ordinance contains specific well construction requirements and Minimum Separation Distances. All Class I wells must maintain the following minimum distances from known point sources of pollution:

Source of Contamination	Separation Distance (Feet)
Cesspools	100
Septic tanks	50
Sewage Disposal Field	100
Sewer Lines	50
Spray Irrigation Fields – Boundary	100

If a potential source of contamination is suspected to exist within 100 feet of the proposed well, a hydrogeologic investigation is required by the township in an effort to identify and locate the potential source of contamination (PSOC). The investigation, conducted by a qualified professional geologist, must include a description of the geology and depth to groundwater near the well.

CONTAMINATION

Section 26-604, Cross Keys Water Service District of the municipal code includes an area of the township having been identified as having contaminated groundwater. This section makes it mandatory for property owners located in the Cross Keys Water Service District to connect with and use the public water system of the Doylestown Township Municipal Authority (DTMA). Doylestown Township has agreed to serve as the lead agency in a joint effort with PADEP, Buckingham Township and Plumstead Township to construct a public water system in the Cross Keys Area to facilitate the supply of safe potable water to certain landowners. Plumstead Township should continue to work with DTMA to ensure a safe, adequate, potable supply of drinking water to township residents and to ensure additional flow from the Patriots Ridge Water System (Cross Keys Water Service District) if required for emergencies such as fire protection. Plumstead Township should also continue to coordinate efforts with surrounding municipalities to provide interconnection of water systems.

WATER CONSERVATION

Plumstead Township zoning ordinance contains various provisions for water quality and conservation. For instance, Section 26-402 *Water Conservation Performance Standards for Plumbing Fixtures and Fittings* of the municipal code requires performance standards applicable for water

closets and associated flushing mechanisms, urinals and associated flushing mechanisms, showerheads, and faucets.

INTEGRATED WATER RESOURCES PLANNING (IWRP)

Integrated Water Resources Management (IWRM) involves the development and implementation of efficient, equitable and sustainable solutions to water and development problems. An Integrated Watershed Resource Plan (IWRP) looks at how water resources might be most effectively and efficiently managed and is an important step in managing water in a way that benefits everyone while protecting the environment. IWRPs consider water supply, resource protection, water quality, stormwater and sewage facilities planning, and related areas such as land use and economic impacts.

In July of 2002, eight municipalities within the Pennridge region adopted the *Pennridge Water Resources Plan* (PWRP). The plan provides a watershed assessment to establish a long-range plan for restoring and protecting the water resources of the region and functions as an Integrated Watershed Resources Plan for the region. The PWRP has eight recommendations:

- Form an Intermunicipal (or municipal) Water Resources Committee
- Develop a public education and awareness program
- Develop a model water resources management ordinance
- Update Municipal Act 537 Sewage Facilities Plan
- Establish a Watershed Monitoring Program
- Conduct a nonpoint source pollution assessment
- Develop a source water protection program
- Prepare an Integrated Water Resource Plan

For the purposes of this comprehensive plan, the PWRP can serve as a guide for Plumstead Township's water supply plan. Implementation of the recommendations in the *Pennridge Water Resources Plan* should be coordinated with current and future Act 167 stormwater management planning in the three major watersheds: Neshaminy; Delaware River; and Tohickon watersheds. Regional implementation of a comprehensive water resources plan should be coordinated with municipal planning tools, including zoning ordinances, subdivision and land development ordinances, sewage facility plans, and this Comprehensive Plan. The township, working in conjunction with the Environmental Advisory Committee (EAC), will continue to educate the public about the importance of protecting water resources. Consideration could be given to preparing a model water resources management ordinance that will assist in preserving and providing adequate and safe water supplies.

SUMMARY

Efficient water resources management requires continuous planning to promote the best possible combination of uses. Given the limitations of the township's hydrogeology, dependence on groundwater for water supplies for future development may be limited. The township should continue to coordinate the application of ordinances including analysis, monitoring, and protection programs, to ensure the adequate supply of water for Plumstead Township. Comprehensive planning is necessary to assure the most efficient use of existing and future water resources and to avoid overdevelopment or costly mistakes affecting quality or quantity. Planning and coordination on a regional or watershed basis is necessary for successful water resources management. Similarly, the inclusion of a water supply component into municipal comprehensive plans is important in order to manage water resources, and ensure the orderly growth and development of the municipality.

STORMWATER MANAGEMENT

INTRODUCTION

Stormwater runoff is the term for rainwater that moves over the ground during and immediately following a rainfall event. The area or land through which stormwater runoff drains is referred to as a watershed. In a watershed undergoing land development and urban expansion, the amount of stormwater runoff following a rainfall event can increase dramatically. This is due to the amount of impervious land created by development and the accompanying reduction of natural grassy or wooded areas. Impervious surfaces are created when the natural landscape is covered by solid pavement, rooftops, and buildings that do not allow stormwater runoff to penetrate. Rather than soaking into the ground (or infiltrating), stormwater rapidly flows over it.

Increases in impervious surfaces are why we get increased amounts (volume) and speeds (rate) of runoff that are responsible for some of the localized flooding and drainage problems. As development increases in a watershed, so do the problems of dealing with greater quantities of stormwater runoff. Failure to properly manage this runoff can result in more flooding; greater stream channel erosion; siltation and sedimentation; and a reduction in groundwater recharge. These problems occur on a regional and watershed level and require watershed-wide approaches.

Plumstead Township has taken steps over the years to create regulations to manage stormwater runoff associated with new development. Originally adopted in 2002, the purpose of the township's regulations is to manage stormwater comprehensively and promote the health, safety and welfare of the residents by minimizing damages caused by stormwater runoff.

The following sections summarize Plumstead's regulations and explain what the township has done not only to regulate stormwater, but to inform the public about the importance of stormwater, and remediate some of the drainage problems in the township. The recommendations that follow

provide township officials tracks to run on to further their efforts to continue to comprehensively manage stormwater within township boundaries.

PENNSYLVANIA STORMWATER MANAGEMENT ACT

The regulations in Plumstead Township are based on watershed stormwater management plans developed by Bucks County. The plans are required by Act 167, the Pennsylvania Stormwater Management Act of 1978, enacted to address the growing problems caused by stormwater runoff within the state. Act 167 requires the Pennsylvania Department of Environmental Protection (DEP) to designate watersheds and establish guidelines for the preparation of stormwater management plans (SMP) for these watersheds. Counties are responsible for preparing the plans and developing ordinance language for municipalities to use when enacting their own stormwater ordinances.

Plumstead Township is located within three of these watersheds, the Tohickon Creek watershed, the Delaware River South watershed, and the Neshaminy Creek watershed. See Figure 5, Hydrological Resources for watershed locations. Both the *Tohickon Creek Watershed Stormwater Management Plan* (2002) and the *Delaware River South Watershed Stormwater Management Plan* (2004) require adequate storage and treatment facilities necessary to capture and treat stormwater runoff specifically for water quality purposes. The *Neshaminy Creek Watershed Stormwater Management Plan* (2010) is an update plan from the original completed in 1992. The plan establishes new volume and peak rate control requirements which meet current standards and restore the natural flow of runoff throughout the watershed to the maximum extent practicable.

REGULATIONS

STORMWATER MANAGEMENT ORDINANCE

Plumstead Township regulates stormwater through a stand-alone stormwater management ordinance. The ordinance requires stormwater management facilities for all new development. The requirements apply to all of the following activities:

- Land development,
- Subdivisions,
- Construction of new or additional impervious surface (driveways, parking lots) which exceed 1000 sq feet,
- Construction of new buildings or additions to existing buildings which exceed 1000 square feet,
- Diversion or piping of any natural or man-made stream channel,
- Installation of stormwater management facilities, and
- Temporary storage of impervious or pervious material where ground contact exceeds 5 percent of the lot area or 5,000 square feet, and where the material is placed on slopes exceeding 8 percent.

All post-construction stormwater management facilities are required to control the volume and peak rate discharge runoff flows, and control streambank erosion. Volume control requirements must meet the criteria to promote groundwater recharge and protect water quality. Runoff peak rate flows must not increase from existing development (pre-development) flows to proposed development (post-development) peak rate flow and in some cases must be below the pre-development rates for certain sized rain storms depending on the sub-watershed location. Controlling both the volume and peak rates during small rain storm events protect streams from experiencing accelerated erosion.

In addition to the above controls, the township requires design criteria for stormwater best management practices (BMPs). Design criteria is provided for detention/retention basins, wet ponds, wetlands, bio-retention structures and details are given for landscaping BMPs. Discharge temperature controls are obligatory for facilities discharging to streams classified as “High Quality” and or “Exceptional Value”²⁹. In the township’s Subdivision and Land Development Ordinance, the use of low impact development techniques such as creating easements around natural watercourses and reducing the planned impervious surface is encouraged during site design.

The township also requires all proposed stormwater facilities to have an operation and maintenance plan to establish the continuing operation and maintenance responsibilities. The stormwater ordinance additionally authorizes a stormwater maintenance fund which requires all person installing stormwater facilities to pay a fee to the township to defray township inspection and maintenance costs of all private and publically owned BMPs.

Currently any project creating impervious surface greater than 1,000 square feet has to comply by the stormwater ordinance and submit a fully engineered stormwater site plan to the township. These site plans generally can cost an applicant a few thousand dollars. Examples of projects of 1,000 square feet of impervious surface are the rooftop of a single family home, a home addition, or a driveway. There has been some discussion in the township that requiring a project of this size to submit a stormwater site plan creates an undue hardship on the applicant when the cost of the project is weighed against the cost of the fully engineered stormwater site plan. The township is considering an optional submission for single-family home projects, allowing applicants to submit a simplified stormwater management site plan in lieu of what is currently required. It is recommended that the township move forward and amend the ordinance to include this option for projects over

²⁹ The Department of Environmental Protection (PADEP) develops water quality standards for all surface waters of the state. These standards, which are designed to safeguard Pennsylvania’s streams, rivers, and lakes, consist of both use designations and the criteria necessary to protect those uses. All commonwealth waters are protected for a designated aquatic life use as well as a number of water supply and recreational uses. The use designation shown in the water quality standards is the aquatic life use. These uses are Warm Water Fishes (WWF), Trout Stocking (TSF), Cold Water Fishes (CWF), and Migratory Fishes (MF). In addition, streams with excellent water quality may be designated High Quality Waters (HQ) or Exceptional Value Waters (EV).

1,000 square feet of additional impervious surface. Above 5,000 square feet of impervious surface, the state recommends a project should still be required to submit a fully engineered stormwater management site plan. The township needs to decide if the cut-off for submitting a simplified site plan should be less than 5000 square feet.

NATIONAL POLLUTION DETECTION ELIMINATION SYSTEM COMPLIANCE

The National Pollution Discharge Elimination System (NPDES) is a two-phased federal program that seeks to establish local regulations resulting in a nationwide reduction of pollutants in waterways. Phase I of NPDES targets medium to large communities; Phase II is aimed at smaller communities. Plumstead Township classifies as a smaller community and, therefore, must develop a stormwater management program that meets state requirements, correlates with a stormwater management plan, and meets the standards of the permit's six minimum control measures. These measures are education, public involvement, illicit discharge detection and elimination, and construction site and post-construction runoff control, and pollution prevention.

Educational efforts in Plumstead include NPDES information handed out with each building application, hosting erosion and sedimentation requirement information sessions for building applicants, and publishing articles about stormwater in the township newsletter. Topics featured in the newsletter include information about naturalizing traditional detention basins, rain barrels, and the County sponsored household hazardous waste collection. The township also uses a bulletin board at the township building to display information on how to plant a rain garden.

Public involvement in stormwater management could be expanded by targeting younger audiences to participate in stormwater educational activities. Reaching out to public schools is a great way to get a captive audience to hear and partake in stormwater management. Educational opportunities could include hosting a stream clean-up day, getting classrooms to participate in 'Drains to Stream' stenciling on storm sewers, or planting trees along stream banks. The township does not have go about this alone, there are a number of watershed groups or conservancies in the Bucks County region who partner with local governments to facilitate educational programs such as these.

The township should continue to utilize the township webpage to educate residents on the role they can play in preventing pollutants from draining into the local streams. The township may want to consider adding specific content for how homeowners can implement do-it-yourself best management practices. Examples of these include, how-to-guidance on rain garden installation, instructions for using rain barrels, and retrofitting detention basins into naturalized wetland areas. The township website should also be utilized to present a summary of the township's responsibility to manage stormwater. The townships' role in Stormwater Management is important because the public should know that in order to keep the waters clean, both residents and the government need to play a part.

In order to detect illicit discharge, the township periodically screens outfalls. Plumstead currently has a database of over 100 outfalls in their storm sewer system. All concerns regarding stormwater drainage problems, illegal dumping, and erosion and sedimentation failures are received by township via phone or email. To insure new basins are installed correctly and to monitor drainage, stormwater collection systems and facilities are inspected within subdivisions following major rainstorm events by the township engineer. All BMPs in new developments are inspected for compliance with the Pennsylvania Stormwater Best Management Practices guidance manual.

According to data collected for stormwater management plans, flooding and accelerated erosion are the most common problems experienced in Plumstead. In 2007, the township sought to remediate some of these problems and were awarded a Growing Greener grant from the state to retrofit three traditionally designed detention basins into wetland areas in the Durham Ridge Subdivision. The township naturalized these basins by planting native wetland grasses and plants and built infiltration trenches to increase groundwater recharge. The basins now detain runoff longer and the plantings effectively provide water quality controls.

Other preventive measures taken to protect water quality are sweeping streets and removing debris, trash, and accumulated sediment from culverts and swales. On-going maintenance of the township fleet ensures the vehicles are not contributing to water pollution.

Efforts should continue in locating illicit discharges and stopping those responsible for discharging pollutants into the streams within township boundaries. Further efforts should be made in detecting stormwater problem areas by prioritizing all stormwater problems including reoccurring pollution problems, obstructions, and drainage problems. A tracking database can be utilized to track those problem areas either found by township officials or reported by the public. If feasible, the obstruction and drainage problems should be evaluated for remediation. Solutions to these problems should be recommended and incorporated into the annual municipal budget or maintenance budget.

Although the township does inspect stormwater facilities, the township currently does not have any operation and maintenance plans (O&M) in place to regularly schedule maintenance and follow procedures to ensure the township owned BMPs are functioning properly. There has been discussion about developing a BMP tracking database to assist in monitoring BMPs and record when O&M took place on these sites.

Operation and Maintenance (O&M) plans should be developed for all township-owned BMPs. Not only because the township requires an O&M plan in its ordinance and should lead by example, but also because O&M plans help to detect problems, decrease repair and replacement costs, and prevent malfunctions. Good O&M plans include the details of regularly scheduled inspections and maintenance. Inspections, which should occur on an annual basis at a minimum, include checking

the structural integrity, health of the vegetation, stability of embankments, sediment accumulation, and collection, storage and release of runoff over time. Maintenance includes removal of debris and the details on how to examine and test the BMP to be sure that it is functioning according to its design, i.e. infiltration, treating water quality, and detention.

Development of a BMP tracking database should move forward to better monitor the operation, maintenance, and function of public and privately owned post-construction BMPs. This database would be an effective tool to help the township stay on top of scheduling O&M and determining if problematic BMPs need remediation. Consideration should be given to retrofitting other publically owned basins from traditional detention basins to naturalized basins if the basins are not infiltrating or removing pollutants from the runoff.

WASTEWATER FACILITIES

Planning for wastewater facilities is an important consideration when formulating a future land use plan for a community. Coordination of the township's sewage facilities planning with the land use planning policies aids in implementing the overall land use goals of the township. Sewage facilities are a factor in determining the location and density of future development, and proper planning helps ensure adequate facilities can be provided to satisfy future growth and development needs. Planning for the proper types of sewage systems also helps ensure the quality of the natural environment.

Pennsylvania laws, which authorize land use and sewage facility planning functions, direct municipalities to coordinate these efforts. Section 301(4) of the Pennsylvania Municipalities Planning Code (Act 247 of 1968), as amended, provides that a plan for community facilities and utilities, including wastewater facilities, be made part of a comprehensive plan. In addition, the Pennsylvania Sewage Facilities Act (Act 537 of 1966) requires that every municipality in the state have an up-to-date sewage facilities plan. Municipal officials must consider their comprehensive plan, zoning ordinance, and subdivision regulations in the preparation, review, and amendment of their official sewage facilities plan.

The purpose of a municipality's sewage facilities plan is to:

- Protect the health, safety and welfare of the citizens living in the municipality by correcting malfunctioning on-lot septic systems, overloaded treatment plans of sewer lines, and wildcat sewers.
- Prevent future sewage disposal problems from occurring.
- Provide protection for both the groundwater and surface waters of the Commonwealth through coordinating planning for the sanitary disposal of sewage with a comprehensive program of water quality management.

The Pennsylvania Department of Environmental Protection (PADEP) cannot issue permits for facilities unless the proposed facilities are consistent with the sewage facilities plan; however, a landowner has the option to request revisions to the municipal sewage facilities plan and may appeal a municipal refusal to revise the plan. PADEP is required to consider a municipality's zoning and comprehensive plan in the evaluation of private requests to change a community's official sewage facilities plan. Therefore, it is important that the township comprehensive plan, zoning ordinance and municipal sewage facilities plan be well coordinated.

HISTORY OF SEWAGE FACILITIES PLANNING IN THE TOWNSHIP

Plumstead Township is one of several municipalities included in Volume I of the *Bucks County Wastewater Facilities Plan* (March 1989) and Volume II – *Bucks County Wastewater Facilities Plan – Central Bucks Area* (April 1990). These two plans were an update of the June 1970 Sewage Facilities Plan prepared for the Commissions of Bucks County, and the 1960 Master Plan for sewage facilities within Bucks County. These previous plans provided little direction or guidance regarding suitability permitting, design, maintenance or operation of on-lot sewage disposal systems. Additionally, the 1970 Sewage Facilities Plan did not address or coordinate sewage facilities planning with local municipal ordinances.

The Neshaminy Basin Sub-Region II 201 Facilities Plan, dated January 1982, prepared for Chalfont-New Britain Township Joint Sewer Authority and Bucks County Water & Sewer Authority by Gilbert Associates, Inc. received approval by PADEP in 1984. The purpose of the plan was to develop a comprehensive facilities plan pursuant to the Federal Water Pollution Control Act of 1972, as amended by the Clean Waters Act of 1977, to expand and upgrade the CNBTJSA treatment plan, or to prove an alternative solution to the treatment plant expansion and upgrade. As part of this plan, a boundary of sewer service within Plumstead Township was identified within the central corridor of the township approximately between Route 611 on the west and Route 413 on the east.

The current official Act 537 plan for the township was last revised November 8, 2002 and approved by PADEP September 15, 2006. This plan addressed changes that had taken place in the township including significant residential development during the 1990's, expansion of public sewer facilities (including into areas of the township outside of the "development corridor") by the Bucks County Water and Sewer Authority (BCWSA), revisions to the township zoning ordinance relative to both development and density provisions as well as natural resource protection, adoption of a comprehensive stormwater management plan, and increased focus on the preservation of agricultural land and farming operation.

The current plan was further amended in October 2008, and approved by PADEP November 10, 2010, to comply with the Court Order Stipulation and Settlement and Agreement as part of the

lawsuit settlement between BCWSA and Plumstead Township. Key amendments to the plan include:

1. Establishment of a Sanitary Sewer District within a portion of the township designating an area consistent with the Act 537 Plan for public sewer service by BCWSA.³⁰

Consistent with the Township Comprehensive Plan and Zoning ordinance, the township anticipates that the majority of residential development and all commercial / industrial development will occur within the Sanitary Sewer District.

All areas outside of the Sanitary Sewer District are limited to on-lot disposal systems. Community and/or public sewer facilities shall not be installed or extended within the areas of the township identified as Study Area 1 (Resource Protection Area) and 2 (Agricultural/Low Density Residential).

A ranking summary for wastewater alternatives for use of on-lot systems, BCW&SA facilities, and community systems for the three redefined study areas is included in the approved Act 537 plan addendum.

2. Identification of parameters outlining when BCWSA can execute sanitary sewer agreements with landowners and developers within the township. Specifically, BCWSA cannot execute any agreements until it has received written notice that the Board of Supervisors of the township has approved a preliminary plan of subdivision or land development within the Sanitary Sewer District. Additionally, BCWSA shall provide to Plumstead Township any landowner requests for preliminary agreements in writing, after which the township will advise BCWSA within sixty (60) days after receipt from BCWSA of notice of the request for a preliminary agreement, as to whether the township intends to contest a particular land development, zoning application, or other proposed subdivision or land development on the basis of noncompliance with the Act 537 Plan or its land use ordinances. If the township intends to contest any such application, BCWSA will not execute a preliminary agreement nor perform and review of plans until the landowner or developer has obtained preliminary plan approval.
3. Plumstead Township will execute a Sanitary Sewer Reservation Agreement in conjunction with the Harvey Avenue Treatment Plant expansion delineating the township's required sewer capacity for the area identified within its Sanitary Sewer District. As of January 2008, the township's requested sewer capacity is 1,125 equivalent dwelling units (EDU's).

³⁰ The Sewage Facilities Plan Amendment (amended in October 2008 and approved by PADEP on November 10, 2010) revised the Sanitary Sewer Service Area previously identified as Study Areas 3, 3A, 4, 5, and a portion of 2 into a single designation—Study Area 3.

4. BCWSA will eliminate both the proposed McGinnis (Plumstead Chase) Treatment Plant and the proposed Carriage Hill Treatment Plant, and will provide sanitary sewer service to existing BCWSA facilities for both the McGinnis (Plumstead Chase) and Carriage Hill residential subdivisions.
5. Notwithstanding this establishment of the Sanitary Sewer District in the event that property owners within Plumstead Township propose individual inground, on-lot sewage disposal systems (such as sandmound or drip irrigation facilities) within the Sanitary Sewer District, such systems will continue to be permitted within this area provided that all systems comply with the rules and regulations of the Bucks County Department of Health and Pennsylvania Department of Environmental Protection.
6. All new future residential housing units within the Sanitary Sewer District shall be required by the township to demonstrate the lack of feasibility of individual inground, on-lot sewage disposal systems on each individual lot before connecting to BCWSA. Lack of feasibility does not include the inability to maximize density under the Zoning ordinance due to the availability of sanitary sewer.

EXISTING WASTEWATER FACILITIES

The availability of adequate sewage disposal systems is a major consideration in the establishment of zoning districts and permitted intensity of development in the township. There are numerous restrictive soils in the township that limit development because of their drainage characteristics, shallow depth to bedrock, or erodible nature. Wastewater facilities in the township consist of centralized public sewer facilities provided by the Bucks County Water & Sewer Authority (BCWSA), the Timberly Farms community treatment plant, and a variety of individual on-lot septic systems serving individual properties.

CENTRALIZED PUBLIC SEWER FACILITIES

Bucks County Water & Sewer Authority collection and conveyance facilities are located primarily within the development corridor in the central portion of the township and discharge wastewater to the Green Street and Harvey Avenue treatment plants of BCWSA that ultimately connects to the Chalfont-New Britain Township Joint Sewer Authority (CNBTJSA) wastewater treatment plant. All three treatment facilities are located within the Neshaminy Creek Watershed outside of Plumstead Township.

The type of treatment used by Bucks County Water & Sewer Authority at the Green Street treatment plant is single stage nitrification and activated sludge with phosphorous removal. The receiving stream is Country Club Run, a tributary to the Neshaminy Creek. The method of sludge disposal from this plant is via liquid sludge to the Harvey Avenue treatment plant. The Harvey

Avenue treatment plant treats via oxidation ditches with denitrification and phosphorous removal, with the receiving stream being Cooks Run, a tributary of Neshaminy Creek.

Per the conditions of the Stipulation and Settlement Agreement, the township is required to execute a Sanitary Sewer Reservation Agreement in conjunction with the Harvey Avenue treatment plant expansion delineating the township's required sewer capacity for the area identified within the Sanitary Sewer District. As of the date of the agreement, the township's requested sewer capacity is 1,125 Equivalent Dwelling Units (EDUs) as outlined in Table 30. The 1,125 EDU's is comprised of 500 EDUs that were projected to be needed as part of the 2006 Act 537 Plan, and an additional 625 EDUs projected to be needed per the Stipulation and Settlement Agreement. The Harvey Avenue treatment plant expansion is anticipated to be completed in late 2011 or early 2012.

Table 30
Plumstead Township Capacity Estimates for Number of Connections to BCWSA

Development Name	Number of Units	Plan Approval Status
Authorized Individual Connections since 10/29/02	16	
Plumstead Crossing	10	BOS Approved - Under Construction
Werner-Stump Road Subdivision	3	BOS Final Plan Approval
Plumstead Chase (McGinnis Tract) Subdivision	45	BOS Final Plan Approval
Ferguson Tract Subdivision	8	BOS Approved – Under Construction
Autumn Preserve Subdivision	24	BOS Conditional Final Plan Approval
Owl's Nest Subdivision	16	BOS Conditional Final Plan Approval
Garden Village Subdivision	51	BOS Conditional Final Plan Approval
Lantern Ridge Subdivision	105	BOS Preliminary Plan Approval
Carriage Hill Subdivision	476	BOS Conditional Final Plan Approval
Urich Tract Land Development	78	BOS Preliminary Plan Approval
DiPalma Tract Land Development	8	BOS Final Plan Approval
Plumstead Business Campus (Appebutter Development)	10	BOS Final Approval
Plumstead Pointe	10	BOS Preliminary Plan Approval
Thompson Service Center Land Development	2	BOS Preliminary Plan Approval
Hanover East - Center Club Land Development	6	BOS Preliminary Plan Approval
Nanni Tract Subdivision	20	Plan filed, no BOS action
Timberly Farms	62	Development Built out
	950	
	<u>-175(*)</u>	
Total	1,125	

* Fill in connections for purposes of capacity reservation in the expanded sewage treatment plant

According to the terms of the Stipulation & Settlement Agreement, the 1,125 EDU's requested represents the maximum number of new EDU's that will be allocated to Plumstead Township by BCWSA within the Sanitary Sewer District. No additional sewer capacity will be allocated by BCWSA to the township as a result of an upgrade or re-rating of the Harvey Avenue treatment plant, by removal of inflow and infiltration, or through the expansion, re-rating, or construction of any other existing or new sewer treatment plan without the written consent of the township. This means that future development within the Sanitary Sewer District, beyond the 1,125 EDU's requested, would require another form of wastewater treatment. The township will continue seeking long-range solutions for sewage disposal capacity and the township's ACT 537 should be revised as the result of new agreements or amendments.

TIMBERLY FARMS WASTEWATER TREATMENT FACILITY

There is one approved public wastewater treatment facility that serves 62 residences in the Timberly Farms development located in the R-1 Rural Residential District. This facility, currently owned and operated by Bucks County Water & Sewer Authority, discharges treated sewage into the Geddes Run, a tributary in the Tohickon Creek Watershed.

The current Act 537 plan for the township was amended in October 2008 to comply with the Court Order Stipulation and Settlement and Agreement as part of the lawsuit settlement between BCWSA and Plumstead Township. Key amendments to the plan specific to the Timberly Farms treatment facility included:

1. BCWSA will not operate any treatment plants in Plumstead Township other than the Timberly Farms Sewage Treatment Plant on Meetinghouse Road within the township.
2. BCWSA will use its best efforts to dismantle and remove the Timberly Farms Treatment Plant if it determines that the cost of operating the treatment plant exceeds the costs of removal of the plant and connection of the Timberly Farms development to existing facilities of BCWSA. During the time that BCWSA operates the Timberly Farms Treatment Plant, the Timberly Farms residents will be charged at the same rate as other customers of BCWSA in Plumstead Township.
3. If BCWSA determines to dismantle and remove the Timberly Farms Treatment Plant, BCWSA will connect the dwelling units currently serviced by the Timberly Farms Treatment Plant and will waive all tapping fees for the homeowners thereby connected. Additionally, if the Timberly Farms Treatment Plant is dismantled, BCWSA will apply for a demolition permit from the township and will restore the existing wetland basin in accordance with the direction of the township engineer to an acceptable level by insuring that stormwater continues to flow to the basin after the removal of the treatment plant. If BCWSA determines to maintain and operate the Timberly Farms Treatment Plan, BCWSA will not further expand the treatment plan or service or connect and additional dwelling units to it.

ON-SITE SEWAGE DISPOSAL

In the absence of public sewer service, the soils suitability for on-lot sewage disposal becomes critical to the design and development of the sewage disposal system. Adequate surface and subsurface disposal depends upon the capacity of the soil to absorb and filter effluent. The Act 537 plan includes a review of soils suitable for sewage disposal systems. This review identified soils suitable for land disposal of treated effluent including subsurface absorption, elevated sand mounds, and spray irrigation.

Subsurface absorption – Areas suitable for subsurface absorption include standard trenches, seepage beds, and sand filters. These areas include soils of the Beddington and Duncannon series.

Elevated sand mounds – Areas suitable for elevated sand mounds include Readington, Pen Lansdale, and Klinesville series.

Spray irrigation systems – Although much of the township is suitable for spray irrigation, the rate of application is restricted.

In addition to these land disposal techniques, stream-discharge systems represent another type of on-site sewage disposal. However, unexpected operational and maintenance problems, particularly in individual residence systems and non-municipal systems that are privately operated and maintained, can result in stream degradation. Because of this, alternatives other than stream discharge should be encouraged.

A large percentage of the township is served by a variety of on-lot disposal systems, including both land application and stream discharge systems. These facilities, which include small nonmunicipal treatment facilities, holding tanks, and individual alternative wastewater treatment facilities, are described in more detail below.

NONMUNICIPAL WASTEWATER TREATMENT FACILITIES

Based on the Township's Act 537 Plan and the *Bucks County Wastewater Facilities Inventory* (1999), there are five nonmunicipal wastewater treatment facilities located in the township that treat domestic sanitary wastes. Four of these facilities use stream discharge for the treated effluent, with one utilizing spray irrigation.

Additionally, as identified in the Act 537 plan and the *Bucks County Wastewater Facilities Inventory* (1999), and verified via the Environmental Protection Agency's NPDES database, there are six residential small-flow treatment facilities throughout the township. These predominantly are comprised of extended aeration systems with discharge to various unnamed tributaries of the Geddes Run, Tohickon Creek, and the North Branch Neshaminy Creek.

HOLDING TANKS

Holding tanks are designed for collection of sewage flows on site to facilitate ultimate disposal at another site. These facilities require regular service and maintenance to prevent their malfunction and overflow. The Act 537 plan identified eight holding tanks within the township.

In addition, the *Bucks County Wastewater Facilities Plan – Volume II – Central Bucks Area* (1990) identified two additional holding tanks, for a total of 10 holding tank facilities within the township.

INDIVIDUAL ALTERNATIVE WASTEWATER TREATMENT FACILITIES

There are twenty-one alternative wastewater treatment facilities located in the township that serve individual residences. All of these facilities dispose of the treated effluent being applied to land via spray irrigation. Most of the spray fields are over 20,000 square feet in size.

LOCAL ORDINANCE PROVISIONS

Plumstead Township has various regulations that ensure the proper and effective planning, construction, and maintenance of wastewater facilities.

The Zoning Ordinance establishes a few provisions including:

- All sanitary sewage collection and disposal systems must conform to requirements of the Bucks County Health Department, the Township Sewage Facilities Plan, the Pennsylvania Department of Environmental Protection, and, where applicable, the standards and requirements of the Bucks County Water and Sewer Authority (BCW&SA).
- No final plan approval or zoning permit shall be issued until approval is obtained from the Bucks County Department of Health for wastewater disposal, and, where applicable, the Pennsylvania Department of Environmental Protection, unless the premises is served by public sewerage facilities, in which case the entity providing sewage disposal services shall be required to provide evidence that the property will be served by public sewerage and that capacity exists for wastewater treatment for this project.
- Connection to public sewerage facilities provided by the Bucks County Water and Sewer Authority shall only be permitted within the Sanitary Sewer Service Area of the Bucks County Water and Sewer Authority, as shown on the map dated January 24, 2008, incorporated in the Order of the Bucks County Court of Common Pleas dated March 27, 2008, approving the Stipulation and Settlement Agreement dated August 22, 2007.
- Prior to approval to connect to the Bucks County Water and Sewer Authority, all applicants within the Bucks County Water and Sewer Authority Sewer Service District shall be required to demonstrate to the township the lack of feasibility of use of individual on-lot sewage disposal systems. Lack of feasibility does not include the inability to maximize density under the Zoning Ordinance due to availability of public sewer.
- No public sewer or sewage pump stations shall be permitted except within the Sanitary Sewer Service Area of the Bucks County Water and Sewer Authority. No community sewage systems or community sewage treatment plants shall be permitted.
- Single-family small-flow treatment facilities shall be permitted within the Bucks County Water and Sewer Authority Sewer Service District where, in the opinion of the township, public sewer facilities are not available and an individual on-lot in-ground system is not feasible.

Additionally, the zoning ordinance specifies procedures for the handling and disposal of sewage liquids and protects environmentally sensitive areas by prohibiting pumping stations, community sewage systems, municipal public sewer systems, community sewage treatment plants, and single-family small-flow treatment plants in the RP Resource Protection and RO Rural Residential districts. The zoning ordinance also specifies standards and dimensional requirements for on-lot wastewater

disposal systems, and also specifies that no portion of required open space may be used for sewage lagoons, ponds, or sprayfields for land application of wastewater.

The Subdivision and Land Development Ordinance (SALDO) also contains regulations related to the provision of wastewater facilities. These regulations are essential in ensuring that adequate and appropriate wastewater facilities are provided for subdivisions and land developments. They supplement the requirements established by the Zoning Ordinance. Wastewater facility planning (review and approval) is coordinated with the review and approval of subdivision and land development plans. The Township's SALDO contains plan submission procedures, plan requirements, design standards, and required improvements relative to wastewater facilities.

Specific to private sewage disposal systems, the SALDO specifies that on-lot sewage disposal facilities must comply with the provisions of Chapters 71 and 73, Administration of Sewage Facilities Program, Pennsylvania Sewage Facilities Act (Act of January 24, 1966), P.L. 1535, No. 537, as amended (35 P.S. §750). The proposed facilities must be deemed satisfactory by the Bucks County Department of Health and a permit for on-lot disposal be issued. A Bucks County Department of Health letter of suitability for on-site disposal must be received by the Planning Commission with the preliminary plan for each and every lot or prior to approval of final plans by the township.

Relative to public sewage / wastewater facilities the SALDO specifies that they these may only be installed within the Sanitary Sewer Service Area of the Bucks County Water & Sewer Authority and that connections to the Bucks County Water & Sewer Authority System shall only occur following review of the plans and approval by Plumstead Township, the Pennsylvania Department of Environmental Protection, and the Bucks County Water & Sewer Authority.

Chapter 18 of the Township Code - Sewers and Sewage Disposal has additional provisions relative to wastewater facilities in the township including holding tanks, on-lot sewage disposal systems, public sewer connections to the Bucks County Water & Sewer Authority system, and spray irrigation and small-flow treatment facilities.

HOLDING TANKS

- Specifies the procedures to be followed for various obtaining permits
- Maintenance and operating procedures
- Regulations regarding the collection and transportation of sewage from holding tank facilities.

PUBLIC SEWAGE FACILITIES

- Provides specifics relative to when connection to public sewers is required
- Details the duties and responsibilities of the Bucks County Water & Sewer Authority and the township relative to the installation and maintenance of these facilities
- Provides regulations relative to the types of wastes prohibited

- Specifies the allowable limits for toxic and poisonous substances into the sanitary sewers

ON-LOT SEWAGE FACILITIES

- Details the permitting process
- Specifies that all systems shall be pumped out by a licensed pumper/hauler at least once every three years or whenever inspection reveals that the treatment tanks are filled with solids in excess of 1/3 of the liquid depth of the tank or with scum in excess of 1/3 of the liquid depth of the tank; and specifies that all structures served by new on-lot systems shall be required to install water conservation devices in compliance with the provisions of the Township's Water Conservation Ordinance (Chapter 26 of the Township Code).
- Requires that owners of on-lot systems operate and maintain on-lot systems to prevent system malfunctions
- Specifies the process to be followed in the event of a system malfunction
- Outlines the requirements for owners of on-lot sanitary sewage systems with gray water discharges

SPRAY IRRIGATION & SMALL-FLOW TREATMENT FACILITIES

- Relative to spray irrigation systems, the chapter provides detailed specifications for the design and operation of these types of facilities, as well as the buffering required to adjacent properties
- Requires that small-flow treatment facilities be constructed and maintained in conformance with all applicable township ordinances, the rules and regulations of the Bucks County Health Department, the Pennsylvania Department of Environmental Protection, and all applicable statutes of the Commonwealth of Pennsylvania.

POTENTIAL ORDINANCE PROVISIONS AND PRACTICES

Although the township currently has strong ordinances and regulations in place regarding the design, construction, and maintenance and operation of various types of sewage facilities, the township may wish to consider strengthening existing ordinance provisions or practices as follows:

Plumstead's on-lot disposal systems (OLDS) have been safe and effective. To ensure this continues, the township will continue monitoring the extent of OLDS malfunctions, potential wastewater facility alternatives to address areas of concentrated malfunctions, and funding sources to offset the cost of any construction alternatives. If and when developments intending to use community wastewater systems are proposed in the vicinity of on-site problem areas, attempts should be made to evaluate area wide wastewater management that includes servicing such problem areas. Additionally, future wastewater planning for the township should evaluate methods to reserve capacity at septage disposal sites, which may in turn reduce the cost of septage pumping to property owners and thus provide an incentive for proper maintenance of OLDS.

Various communities in the County have adopted ordinance provisions requiring a primary OLDS disposal area and reserve area for each individual lot. The township may wish to consider similar

ordinance provisions so all new lots served by an OLDS has a primary disposal area and reserve (set aside) disposal area suitable in area and containing appropriate soils, should the primary disposal area need to be replaced.

To supplement the provisions of the Sewage Management Chapter of the Township Code, consideration could be given to disseminating educational material to residents on a periodic basis via the township newsletter and website as a reminder of the need for proper operation and maintenance of OLDS.

Similar to other on-lot facilities, specify the process to be followed for any malfunctioning small-flow or spray irrigation systems. While this has not been an issue, if problems should arise for these types of systems, a prescribed remediation process will be in place.

SOLID WASTE MANAGEMENT

Solid waste management is the process of providing an economically and environmentally sound means for the storage, collection, transportation, processing, and disposal of municipal waste and recyclable materials.

In Pennsylvania, through the Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988 (Act 101), counties are given the responsibility to prepare a solid waste management plan that guides the management of municipal solid waste for a ten year period. In addition, municipalities are empowered to adopt resolutions, ordinances, regulations and standards to carry out the responsibilities mandated by state regulations. The act requires that mandated municipalities³¹ like Plumstead Township must establish and implement a curbside recycling program, implement a biannual curbside leaf waste collection, implement a system to require business recycling, educate residents and business of the requirements biannually, and report the results of the program annually to the county.

Act 140 of 2006 adds additional requirements for waste management. These include special waste collection programs, anti-littering programs, mandatory waste and recycling collection, additional educational programs, and an enforcement program that monitors compliances and issues fines.

Bucks County's Solid Waste Management Plan (2006) provides guidance for the management of solid waste in Bucks County through the year 2014. It includes recommendations for attaining the goal of recycling 35 percent of the waste stream.

³¹ Act 101 mandated municipalities: municipalities either with a population of between 5,000 and 10,000 residents and a population density of over 300 persons per square mile or with a population greater than 10,000 residents.

All property and business owners in Plumstead Township contract directly with private haulers to collect, transport, and dispose of their municipal solid waste. The township has also instituted mandatory curbside recycling programs. The materials collected as part of the curbside programs include: aluminum/steel food/beverage containers, three colors of glass food/beverage containers, #1 and #2 plastic bottles, and newspaper. Some private haulers allow additional materials and different types of curbside collections. Although these systems meet the requirements, they create a degree of residential confusion, and require additional education and promotion to overcome.

Currently, the township collects leaves, tree limbs, and Christmas trees for composting at various times throughout the year. The township has a vacuum truck for curbside leaf collection.

Pennsylvania set a goal in 1997 to recycle 35 percent of the municipal waste stream by 2003. Although the Commonwealth and Bucks County both reportedly reached this goal in 2002, Plumstead Township appears to have fallen short of this goal. Some solid steps need to be taken to reach this goal. These would include better reporting of recycling activities, expanded business recycling education, and stricter, more comprehensive regulations and ordinances.

The issue of reporting can, in part, be addressed through municipal ordinances. Through such ordinances a municipality could regulate haulers operating within its borders and require the reporting of all recyclables collected from both residential and non-residential customers. The enforcement of the ordinance would enable a municipality to determine more accurately the recycling rate within their community. In addition to increasing recycling rates, having a better accounting of non-residential recycling tonnages can increase the eligible tonnages of recyclable materials that can be included on PADEP Performance Grant applications, which could result in greater income to the municipalities through this program.

It is anticipated that private haulers will continue to provide for the collection, transportation, processing and disposal of municipal solid waste as well as the recyclables generated in Bucks County municipalities. A move toward contract collection may standardize collection practices and education, ensure accurate reporting, allow for expanded services (i.e. bulk waste), and support newer forms of recycling (i.e., single-stream and recycling rewards programs). Contract collection is a system where a municipality or group of municipalities exercises their authority to require all single family residential units to use a single hauler contracted by the township.

The activities associated with the development of ordinances and educational programs may themselves be eligible for funding assistance through Section 902 of Act 101. Assistance in the evaluation of expanding a leaf waste collection program is available through the Technical Assistance Grant program. These programs are administered through the PADEP and funded by the Solid Waste Association of North America (SWANA).

TOWNSHIP ADMINISTRATION

The township administration offices are in the municipal building at 5186 Stump Road near the village of Plumsteadville. The township building contains one of the original two-room schoolhouses in the township (circa 1858 and restored in 1982) that currently serves as a meeting room. The building also houses the township police headquarters. The township maintains regular office hours and open meetings to meet the needs of residents.

The township manager is in charge of the day-to-day operation of township services and oversees a staff of approximately 32 employees, 18 of which work in the Plumstead Township Police Department. In accordance with Act 3 of 2008, the manager is the designated Right-to-Know Officer and oversees all requests submitted to the township. In addition to providing administrative leadership, the manager is also responsible for agenda preparation, meeting management, developing and administering the municipal budget, and improving the efficiency and effectiveness of municipal services. The township has a 5-year capital improvement program which is used primarily to schedule needed infrastructure improvements predicated on the availability of fiscal resources.

According to the manager, current administrative staffing levels are sufficient to meet the township's needs. However, as development of a township-wide park comes to fruition and additional park and recreation activities are offered, the manager sees a possible need in the future to add an employee to oversee the township's park and recreation program. The position would be in charge of planning recreational activities, implementing the park and recreation program, looking for grant opportunities, and possibly taking over the scheduling of park and recreation facilities.

PUBLIC WORKS

The Plumstead Township Public Works Department is located at 5119 Stump Road on a site of approximately two acres. The site, which is near the township building, houses a pole barn, a maintenance building, the main shop, municipal trucks and other specialized pieces of equipment. With a full-time staff of nine employees including the director, the public works department is responsible for maintaining the township roadways, parks and other public areas, municipal water systems, and other tasks such as leaf collection, ditch cleaning and maintenance, and routine maintenance of municipal vehicles and equipment.

Township road maintenance responsibilities include snow removal, roadside and road bank mowing, tree and brush trimming along the roadways, and road reconstruction. Where many other communities hire private contractors to pave and reconstruct their local roads, Plumstead's public works staff has the capability and equipment to do this task in-house. The department has a milling machine that tears up old asphalt and recycles it for reuse allowing the road to be stripped to its subgrade and reconstructed. There are approximately 63 miles of township roadways within

Plumstead. In the resident survey, when asked to rate township services, nearly 60 percent of the respondents rated street maintenance as good or excellent and 72 percent rated snow removal as good or excellent.

The township's parks and many of the open space areas are maintained by the Public Works department. Duties include mowing, safety checks on playground equipment, maintenance of playgrounds and sports fields, and general upkeep of the land and facilities. In addition, the department also handles reservations for recreational field usage and collects fees for use of the fields.

Duties involved in running the township's water system include customer service and maintenance, meter reading, responding to meter service calls and other customer calls, and billing and collections. While the public works staff makes repairs to well houses and meters, a licensed contractor is hired to handle the operations side of the water systems. (More detailed discussion on water facilities can be found in this chapter under Water Supply and Protection.)

According to the director of Public Works, stormwater drainage is the biggest challenge to the department. Problems such as potholes, which are created by stormwater run-off from impervious surfaces, are a township-wide issue. After heavy rain events, significant stormwater runoff often poses problems for certain areas in the township, specific areas noted include Dyerstown and Point Pleasant. (See the Stormwater Management section of the plan for further discussion and recommendations to address this issue.)

Current needs of the department include a street sweeper and a tub grinder. Purchase of a street sweeper would help the township in complying with mandates under the National Pollution Discharge Elimination System (NPDES). Currently, the township hires a private contractor for street sweeping services. A tub grinder would enable the department to process, grind, and produce mulch with the yard waste that is collected.

Recordkeeping abilities and improving the efficiency of operations were identified as projected long-term needs within the next ten years.

POLICE SERVICES

The Plumstead Township Police Department shares the municipal building with the township administrative staff at 5186 Stump Road. Staffed by fifteen uniformed officers including the Police Chief, two full-time clerical employees and one part-time crossing guard, the department provides 24-hour police protection throughout the township. In the resident survey, when asked to rate township services, 88 percent of the respondents rated police protection as good or excellent.

The police department's patrol unit handles squad calls, traffic accidents, traffic enforcement, and patrol of residential neighborhoods and nonresidential areas within the township. This unit also has other capabilities such as bike patrol, traffic accident reconstruction, and truck safety inspections. In addition to ten patrol vehicles, the department also has a bike patrol that can be employed in areas such as the canal towpath and other bike trails and paths throughout the township. Each bike patrol officer is equipped with a radio and can provide any service that a patrol car can provide. In an effort to reach out to the community and encourage bicycle safety, the bike patrol sponsors a rider safety course at a local school and, upon request, offers bike rodeos with a rider safety course and informal bike safety checks.

In addition to being part of the Central Bucks Youth Aid Panel (YAP) which works to divert first-time offenders from the juvenile justice system, the department is involved with the Central Bucks Special Response Team, a multi-jurisdictional agency that responds to high-risk incidents in central and upper Bucks County. Also, Plumstead is a member of the Bucks County Major Incident Response Team (MIRT), which consists of police officers from all areas of the county that are specially trained to deal with large-scale incidents such as major flooding.

The Police Chief believes there are no immediate needs to be addressed for the police department. While it is acknowledged that the department's office space is tight and at its maximum use, the department is making due with existing conditions. A number of years ago, the township purchased an adjacent parcel containing an existing house with the vision of relocating the police station next door. This has not happened due to budgetary constraints. However, in noting that the police department is out of room, the township manager is hopeful that the police station will be able to relocate on that site in the future.

Depending upon the extent of growth in the next ten years, needs for additional police personnel, equipment, and office space, may have to be addressed. Future growth should be monitored closely to ensure that needs for police protection is sufficiently provided.

FIRE PROTECTION SERVICES

Two fire companies which operate three fire stations are located within Plumstead Township. Both fire companies are staffed and operated by volunteers. The Insurance Service Office (ISO) standards for fire protection recommend that suburban areas be within a 2.5-mile radius of a fire station with a first response engine. The entire township falls within the recommended distance radius from these fire stations with the exception of a limited area within the western corner of the township that is served by the Dublin Volunteer Fire Company. In the resident survey, about 90 percent of the respondents rated fire protection as good or excellent.

PLUMSTEADVILLE FIRE COMPANY

Plumsteadville Fire Company serves the western portion of the township along with small areas in Bedminster and Tinicum townships. This fire company operates two stations: Station #24 is the company's main station and is located at 5064 Stump Road, in close proximity to the municipal building; Station #20 is a substation located at 970 Easton Road in the southwest portion of the township. Between both stations, membership totals approximately 35-40 volunteers. The company's equipment includes two Class A engine trucks, one reserve engine truck, one ladder truck, one heavy-duty rescue vehicle, one 3,000-gallon tanker truck, and one fire-police unit equipped with Quick Response Service (QRS). Current needs that were identified include manpower and funding. Projected long-term needs, over the next 5 to 10 years, include replacement of the substation and possibly some trucks that are reaching the age at which they need to be replaced.

POINT PLEASANT FIRE COMPANY

Point Pleasant Fire company provides service to the eastern half of Plumstead, the southern one-third of Tinicum Township and the northern one-third of Solebury Township. This fire company operates out of one station (Station #41) located at 6500 Point Pleasant Pike in the eastern half of the township. The staff consists of 38 volunteer members. The company's equipment includes: two Class A engine trucks, one reserve engine truck, one fire rescue vehicle, one tanker truck, one quick response truck, one field truck, one marine dive unit, two boats, and one chief vehicle. According to the Fire Chief, fire calls have increased significantly—at least doubling—over the last five years. In recent years, the Point Pleasant Fire Company is averaging just under 200 calls a year, with approximately 40-45 percent of those being fire alarm calls. The Fire Chief indicated the current needs include manpower, funding, and having adequate access to water for fire protection. Mid- to long-term needs (5 to 10 years) include upgrading all of the company's radios, replacing an aging truck, and streamlining by having trucks that serve multiple functions thereby reducing the fleet.

Manpower and funding are common needs at both local fire companies. Extensive training requirements combined with family and work obligations leave many fire companies with fewer volunteers. A contribution is made each year from township funds to the fire companies. However, funding is a constant need as fire apparatus and maintenance of equipment are expensive. In addition, both fire companies face large costs to upgrade their radio systems within the next few years to be compatible with the county's new radio system that should be in place by 2012-2013. The local community should assist local fire companies in volunteer recruitment efforts to meet staffing needs and should continue to assist the companies with the financial challenges and needs they face. In addition, adequate water supply for fire protection for existing and proposed developments should be provided.

EMERGENCY MEDICAL SERVICES

Point Pleasant-Plumsteadville Emergency Medical Services (EMS) provides emergency medical services to residents and visitors of Plumstead Township and surrounding communities. The squad operates from its station located at 5205 Stump Road near Plumsteadville.

This rescue squad is capable of providing both Basic Life Support (BLS) and Advanced Life Support (ALS) services. BLS service includes first aid and basic pre-hospital patient care and transport. ALS service includes enhanced pre-hospital care including handling cardiac arrest and trauma calls. As required under state licensing standards, this rescue squad has a full time paramedic and an emergency medical technician (EMT) on duty 24-hours per day, seven days a week. The Plumsteadville fire company is recognized as having Quick Response Service (QRS) capabilities that provide additional emergency medical service within the community and surrounding areas.

According to the rescue squad chief, the general trend in the number of calls received has increased in step with population increases. Current needs identified by the chief include financial support, volunteers and facilities upgrades. In order to provide the best care possible, employees and volunteers are faced with constant demands to keep up with current technology and training. According to the chief, few state and federal grants are available to EMS units. This combined with decreasing revenues from insurance reimbursements make it difficult to offer benefits/incentives to employees and volunteers. The decrease of available volunteers makes staffing and typical fundraising events difficult as does the limited facility resources. Specific future needs (over the next five to ten years) identified by the chief include replacing two or three ambulances and a Supervisor vehicle, facility upgrades, and upgraded radios as required by the Federal Communications Commission (FCC).

Township officials will continue to coordinate with local emergency providers to ensure the provision of emergency services in the most efficient service and expedient manner possible. In the resident survey, 86 percent of the respondents rated ambulance service as good or excellent.

HEALTH CARE

Although not located within the boundaries of Plumstead Township, Doylestown Hospital is a regional hospital that provides important medical services to residents in the Central Bucks area. The hospital is licensed for 247 beds and has a staff of more than 420 physicians, dentists and specified professional personnel. In recent years, the hospital has undergone an expansion plan, a major part of which includes the relocation and expansion of the hospital emergency room, a 400-parking space garage, and space to accommodate the potential expansion of private treatment areas.

Due to the aging of the baby boomer generation, an increase in the elderly population is projected. While many elderly individuals will likely remain in their homes or move to more suitable residences, others will need services or facilities offering long-term care. Transportation services, such as that offered by Bucks County Transport which provides transportation to and from medical facilities, human service agencies, and other destinations, will become even more important as the population ages. Also, the need for alternative methods of long-term care, such as adult day care, personal care facilities, and in-home care may become more important to adequately meet the needs of residents. Through monitoring of population trends, township officials should continue to anticipate the needs of seniors and support programs that enhance public health.

The township zoning ordinance allows several uses geared to providing care or services for elderly or disabled residents such as life care facility/full care facility and nursing home or personal care boarding facility. Accessory dwellings and residential conversions are also permitted, which are often used by homeowners to provide housing accommodations for the care of elderly or disabled relatives. The zoning ordinance appears to adequately provide for elderly housing and health care needs.

EDUCATIONAL FACILITIES

The public schools serving Plumstead Township are part of the Central Bucks School District which also serves Chalfont, Doylestown, and New Britain boroughs, and Buckingham, Doylestown, New Britain, Warrington, and Warwick townships. Central Bucks SD has an area of 122 square miles and a population of over 101,000. Current district-wide enrollment is approximately 20,500, making it the third largest school district in the state. PSSA test scores are highest in the county, 4th highest in the tri-county area and 6th highest in the state. Over 90 percent of Central Bucks students further their education at two- and four-year colleges, and Central Bucks has a graduation rate of about 97 percent.

With a total district-wide employment number of approximately 3,000, the school district is a major employer in the area. According to the state's list of top employers, the Central Bucks School District ranks as the county's number one employer based on number of employees.

District-wide, there are fifteen elementary schools (grades K-6), five middle schools (grades 7-9), and three high schools (grades 10-12). Public school district facilities located within Plumstead include Gayman Elementary, Groveland Elementary, and Tohickon Middle School. As of the 2009-2010 school year, approximate enrollment figures for those schools were as follows:

Table 31
Public Schools in Plumstead Township

School	Address	Date Built	Current Enrollment
Gayman Elementary	4400 Pt. Pleasant Pike	1960 (Renovated in 1999)	600
Groveland Elementary	1100 N. Easton Road	2000	1,100
Tohickon Middle	5051 Old Easton Road	2002	1,100

According to the Director of Operations for the school district, enrollment has generally been flat, or constant, over the last three years. Prior to that, Plumstead was one of the growth areas within the district. Projected needs for the next five to ten years are dependent upon the level of growth that occurs in the township. With the prospect of the Carriage Hill residential development starting construction in the southwestern portion of the township, school officials will need to evaluate how to best accommodate a potential increase in students from the approved 463-unit residential development.

The township is also served by a nonpublic school, the Plumstead Christian Academy, which consists of a junior high school (housing 6th through 8th grades) and a high school (housing 9th through 12th grades). Located on a 32-acre campus along Old Easton Road, current enrollment at the Plumstead campus is approximately 250 students.

LIBRARIES

Residents of Plumstead Township are served by the Bucks County Free Library System, which not only maintains seven branches throughout the county but also provides access and support for eleven community public libraries in various municipalities. The system also includes several more specialized libraries such as the Law Library at the Bucks County Courthouse and the libraries located on various campuses of Bucks County Community College.

The closest public libraries to Plumstead Township are located in Doylestown and New Hope boroughs and Bedminster Township. The Doylestown District Center Library, located at 150 S. Pine Street, Doylestown, is situated near the Michener and Mercer museums in the cultural district area of the borough. The Free Library of New Hope and Solebury is located at 93 West Ferry Street in New Hope. The Pipersville Free Library is located at 7114 Durham Road in Pipersville and serves Bedminster and surrounding communities. Of the three, the Doylestown library is a branch library; Pipersville and New Hope-Solebury libraries are two of the eleven community public libraries in the county system.

UTILITIES (ELECTRIC, GAS SERVICE, PIPELINES)

The Philadelphia Electric Company (PECO) is the distributor for electric service to Plumstead, although with the deregulation of electricity in Pennsylvania, customers are now allowed to choose their own electric supplier. PECO's power is distributed to local residences and businesses from a substation. The company is obligated by the Pennsylvania Utility Commission to provide adequate and reliable service to all customers. PECO provides gas service in portions of the township. PECO monitors development activity to determine the demand for electric and gas but relies on municipal assistance to obtain specifics about land use planning. The township will continue to communicate with PECO about future planning and development activity. PECO owns and operates a high-tension transmission line that traverses the interior of the township. While most of the transmission line is located on PECO-owned lands, the remaining portions of line are located within easements over private property. As discussed in the Chapter 4, Open Space and Recreational Resources, a majority of the land containing the PECO transmission line has been proposed for inclusion in the township's trail network.

The Texas Eastern Transmission Corporation owns and operates a major natural gas pipeline that connects Texas and the Gulf Coast with high demand markets in the northeastern United States, supplying fuel for electric generation facilities and helping to meet peak-day demands. A portion of this pipeline traverses the interior of Plumstead Township. A total of five pipes (three 24-inch, one 30-inch and one 36-inch) are located underground within easements.

The Point Pleasant Pumping Station withdraws surface water from the Delaware River to Bradshaw Reservoir (on the corner of Bradshaw and Moyer roads) via an underground pipeline where it is temporarily stored. At this point, the pipeline splits—a portion of the water is piped southwest where it discharges into the North Branch Creek (that flows into Lake Galena in New Britain Township) and the other portion of the water is piped westward across Bedminster Township and discharges into the East Branch of the Perkiomen Creek. This portion of the underground pipeline parallels the Texas Eastern's pipeline between the reservoir and its terminus at the East Branch of the Perkiomen Creek. The Pumping Station, which is owned and operated by the North Wales and North Penn Water Authorities, provides drinking water for its 50,000 Bucks and Montgomery county customers. Under certain conditions, the water discharged into the East Branch flows southwest to the Limerick Generating Station in Montgomery County where it is used for cooling.

TELECOMMUNICATIONS

Cable TV service is provided by Verizon and Comcast. Service is provided via cables that provide both television and telephone signals. Cables also provide signals to computers and other data devices. Some of the wire cables have been replaced with high speed fiber optic cables to provide

faster signal transmission. Adequate service is an issue of quality of life and also economic development. Businesses and consumers desire quality telecommunication services.

Cellular telephone services are provided by several carriers with the assistance of antennae inside and outside of the township. There are several cellular towers and antennas in the township. There are two free standing towers in the southern portion of the Route 611 corridor—one on the southwest of the Route 611/Ferry Road intersection and the other just north of the Route 611 Bypass/Main Street intersection on the western side Route 611. There are two cellar antennas attached to the PECO high tension towers—one is located near the intersection of Curley Hill and Old Easton roads and the other along McNeal Road. There are also cellular antennas attached to the top of the water tank in the Durham Ridge development southeast of Gardenville and on the top of a silo located at Fieldstone Farm off Sladek Road in the northeastern portion of the township.

Use G28 Telecommunications Facility is permitted by conditional use in the IN Industrial District, within the new tower/pole construction overlay zone along the rights-of-way lines of Route 313 and 611, and such facilities may be attached to a tower or tall structure existing at the date of the applicable zoning regulations in any zoning district.

SUMMARY OF RECOMMENDATIONS

WATER SUPPLY AND PROTECTION

- Continue to implement water resources management and protection measures/programs to protect Plumstead’s water quality and quantity.
- Encourage and promote an Integrated Water Resources Planning approach that promotes land development, water supply, stormwater, and wastewater techniques that maintain the natural functions of the hydrologic cycle.
- Prohibit incompatible uses near surface water and preserve and manage groundwater recharge areas to ensure a sustainable water supply. Protect surface water and groundwater from point and non-point source pollution, over-withdrawal and potential sources of contamination via source water protection planning.
- Continue to manage future growth based upon the carrying capacity of the underlying aquifer on a site-by-site basis to ensure adequate supply water for township resident.
- Implement the recommendations from the *Plumstead Township Groundwater Study* (2008).
- Cooperate with state, county, and municipal government officials to help implement appropriate recommendations of the Pennsylvania State Water Plan (Act 220).
- Preserve groundwater resources by preserving open spaces, recharge areas, protecting areas around wellheads, and balancing water demand with water supply. Land should be preserved throughout the township as a means of protecting groundwater supplies and recharge areas.
- Review periodically, and update as necessary, municipal ordinance language related to water resource protection.

- Work with willing landowners in pursuing preservation measures taking into account available funding, landowner needs, and township goals.
- Continue to work with adjacent municipalities with regard to water supply issues.
- Maximize the efficiency of water supply systems and protect water quantity by maintaining water lines and promoting water conservation. Implement procedures to correct existing facility deficiencies and improve facility capacity.

STORMWATER MANAGEMENT

The following are recommendations for the township to further its efforts to continue to comprehensively manage stormwater within the township boundaries.

REGULATIONS:

- Update the stormwater management ordinance to be consistent with the new state water quality standards when they are issued.
- Continue to encourage new development projects to incorporate low impact development (LID) techniques to assist in meeting the stormwater management requirements.
- Evaluate the need to develop a stormwater site plan alternative for small residential projects which would not require engineering.

EDUCATION:

- Involve the public in stormwater management by targeting younger audiences, i.e. partnering with public schools, to participate in stormwater educational activities.
- Continue to inform residents how they can play a role to help reduce pollutants from draining into the streams through publications and posting information on the township's website. Adding content to the township's website including do-it-yourself BMPs and a summary of the township's stormwater management responsibilities will help to supplement what is currently presented.

OPERATION AND MAINTENANCE:

- Develop Operation & Maintenance plans for all township-owned stormwater best management practices (BMPs) which would detail regularly scheduled inspections and maintenance.
- Move forward with the plan to develop a BMP tracking database to better monitor the operation, maintenance, and function of public and privately owned post-construction BMPs. This database would not only help the township stay on top of scheduling O&M, but also determine if problematic BMPs need remediation.

PRIORITIZE PROBLEM AREAS

- Continue efforts to locate illicit discharges and further these efforts by detecting and prioritizing stormwater problem areas, including obstructions and drainage problems. The tracking database can also be utilized to track those problem areas either found by township officials or reported by the public.
- Evaluate problematic BMPs and other drainage problems for remediation and improvement.

WASTEWATER FACILITIES

- Continue seeking long-range solutions for sewage disposal capacity and the revise the township's ACT 537 plan as the result of new agreements or amendments.
- Continue monitoring the extent of on-lot disposal system (OLDS) malfunctions, potential wastewater facility alternatives to address areas of concentrated malfunctions, and funding sources to offset the cost of any construction alternatives.
- Consider ordinance provisions requiring that all new lots served by an OLDS have a primary disposal area and reserve (set aside) disposal area suitable in area and containing appropriate soils, should the primary disposal area need to be replaced.
- As part of a public information effort, disseminate educational materials to residents on a periodic basis as a reminder of the need for proper operation and maintenance of OLDS.
- Similar to other on-lot facilities, specify the process to be followed for any malfunctioning small-flow or spray irrigation systems.

SOLID WASTE MANAGEMENT

- Review existing requirements, including the new Act 140 rules.
- Establish relationships with township haulers to identify differences in service levels.
- Standardize service levels across haulers for residential and commercial activities.
- Research contract collection to allow possible alternative collection practices (i.e., single-stream).
- Expand the township's education obligation to reach all residents and business owners.
- Consider staff training on current waste issues through one of several professional organizations.

TOWNSHIP ADMINISTRATION

- Consider the possible need in the future to hire an employee to oversee the township's expanding park and recreation program.
- Continue to evaluate ways to streamline township operations while continuing to provide the necessary community services.
- Consider current equipment needs of the Public Works Department in light of municipal budget constraints.

POLICE SERVICES

- Monitor development activity closely to ensure that needs for police protection is adequately provided.

FIRE PROTECTION SERVICES

- Assist local fire companies in volunteer recruitment efforts to meet staffing needs and continue to assist the companies with the financial challenges and needs they face.
- Work with local fire companies to ensure adequate water supply for fire protection for existing and proposed developments.

EMERGENCY MEDICAL SERVICES

- Continue to coordinate with local emergency providers to ensure the provision of emergency services in the most efficient and expedient manner possible.

HEALTH CARE

- Continue to anticipate needs of aging baby boomers and seniors and support programs that enhance public health.

EDUCATIONAL FACILITIES

- Continue monitoring public school enrollment figures to best evaluate how to accommodate future growth and satisfy educational and facility needs.



Chapter 8

Planning and Zoning in Surrounding Municipalities

As land use decisions in one municipality can substantially affect conditions in surrounding areas, it is important to ensure that policies developed for one community do not create conflicts with adjoining lands in another community. For this reason, the Pennsylvania Municipalities Planning Code (MPC) requires that comprehensive plans take into account planning in surrounding municipalities, the county, and the region.

The purpose of this chapter is to ensure that policies developed for Plumstead do not create conflicts with adjoining lands but encourage a regional approach to address planning problems and issues. The following discussion provides an analysis of the relationship between Plumstead and existing land uses, zoning, and future land use planning in neighboring communities. It also compares land use and planning in the township to county and other regional planning efforts.

RELATIONSHIP AMONG PLAN COMPONENTS

The components of the *Plumstead Township Comprehensive Plan* are interrelated by their common goal of providing a high quality of life for Plumstead residents. The stated goals and objectives are designed to promote and protect the public health, safety, and welfare of the township. Clean air and water, a safe and efficient transportation system, quality housing, the provision of park and recreation opportunities, and economic development are all issues that are important to township residents. Each chapter, or plan component, addresses a different issue. Collectively, these components form a common vision for the township's future.

In preparing this Plan, efforts were made to ensure a high degree of coordination among the various plan components and a general consistency among the findings and recommendations provided in each chapter. Individual elements of the Plan are interdependent on and interrelated with one another. For example, the Transportation chapter makes a strong connection between transportation and land use. Its recommendations involve providing a variety of transportation alternatives including pedestrian and bicycle facilities that can also be used for recreation and can compliment park and open space areas. Recommendations regarding community facilities and services like police and fire protection are influenced by current conditions, projected trends, and

future land use planning. The provision of these facilities, in turn, help to shape future land use planning.

COMPATIBILITY WITH SURROUNDING MUNICIPALITIES

Plumstead Township borders seven municipalities in Bucks County (i.e., Tinicum, Bedminster, Hilltown, New Britain, Doylestown, Buckingham, and Solebury townships) and two municipalities in New Jersey (i.e., Kingwood and Delaware townships). Each of these bordering municipalities has development, land use plans, and zoning controls that must be examined to ensure the compatibility of this comprehensive plan.

NEW JERSEY

Kingwood Township and a small area of Delaware Township, both in Hunterdon County, New Jersey, lie to the east of Plumstead across the Delaware River. The riverfront in these communities contains some residential uses in addition to preserved natural areas that are part of the Delaware and Raritan Canal State Park and Bulls Island State Park. Both NJ municipalities have adopted floodplain regulations similar to Plumstead's, so the impacts of flooding from these communities should be minimal since only low-density residential development is permitted along the riverfront. Given the width of the river and absence of bridge connections between Plumstead and neighboring New Jersey communities, there are no significant impacts from land use activities between the communities. However, township officials should ensure that any future land use initiatives along Plumstead's riverfront should be conducted in a manner that has a positive influence on these neighboring communities.

TINICUM TOWNSHIP

Tinicum Township borders Plumstead to the northeast. Both townships share the Tohickon Creek as the municipal boundary line which extends from the creek's confluence with the Delaware River at the village of Point Pleasant to just below Iron Bridge Road in Tinicum.

With the presence of significant natural resources and steeply sloped topography, a majority of the land along both sides of the municipal boundary is protected open space as either parkland or through open space preservation efforts. In addition to privately-owned preserved land, Point Pleasant Community Park, Tohickon Valley County Park and Ralph Stover State Park are located along one or both sides of the Tohickon Creek. With the exception of the village of Point Pleasant, Plumstead's RP Resource Protection district encompasses this region of the township and is consistent with the adjacent RA Residential Agricultural zoning district in Tinicum. Each of these zoning districts requires a minimum lot area of 2 acres.

Bisected by the Tohickon Creek, the village of Point Pleasant lies in both municipalities and, as such, is subject to village zoning regulations applicable to each township. Compatible land uses in both portions of the village include residential and commercial. Plumstead's VC Village Commercial District and Tinicum's VC Village Center district permit similar uses and densities and are fairly consistent with each other.

Future land use planning in both townships is also consistent. Areas in Plumstead designated as Resource Protection and Village Center match up well to adjacent areas in Tinicum designated as Existing Development and 'Land to be Kept in Park, Conservation or Recreation Uses' as noted on the Land Use Plan in the *Tinicum Township Comprehensive Plan* (1993).

Tinicum, like Plumstead, has taken steps to support the goals and policies of the Lower Delaware River Management Plan prepared by the Delaware River Wild and Scenic River Task Force and the National Park Service. Both townships have incorporated overlay district regulations into their zoning ordinance that are intended to provide additional protection measures for areas along the Delaware River and Tohickon Creek.

BEDMINSTER TOWNSHIP

Bordering Plumstead to the northwest is Bedminster Township. Both municipalities share a border which extends from Route 313, along Applebutter Road, Route 611 (Easton Road), Township Line Road and Route 413 before crossing northeast to the Tohickon Creek.

Outside of the Route 611 corridor, both townships contain mostly agricultural and residential land uses along the border. Rural residential and agricultural land uses primarily abut Plumstead in Bedminster's AP Agriculture Preservation and R-3 Residential-3 districts. Adjacent land uses in Plumstead's RO Rural Residential district are single-family residential, agricultural, and rural residential along with some open space areas. The overall intensity permitted in Bedminster's AP district is generally consistent with that permitted in Plumstead Township's corresponding RO district.

At the municipal border near the Tohickon Creek, Bedminster's AP district is generally consistent with the intent of Plumstead's RP Resource Protection designation which is intended to protect areas of natural and scenic beauty along the Tohickon Creek, Delaware River, and Delaware Canal.

Bedminster's sole Residential Development Area surrounds Dublin Borough, a portion of which borders the western corner of Plumstead that is intended to remain as a Rural Area. This area in Bedminster, zoned R-3, permits a variety of housing types at various densities greater than Plumstead's RO district.

Pennland Farms West, an approved subdivision in Bedminster consisting of about 225 single-family residential dwelling units, is located along Applebutter Road adjacent to Plumstead's R-1 Residential

district containing the Landis Greene residential development. While the entrances to these neighboring developments are near each another, the dwelling units are separated by Landis Green Park and a large rural residential parcel. Both the existing and approved developments are a result of curative amendments. Plumstead's R-4 Residential district contains the Cabin Run development and borders Bedminster just west of Kellers Church Road. At a maximum density of 3.22 dwelling units per acre (8 dwelling units per acre specific for townhouses), this district allows a greater density than Bedminster's AP district. While not consistent with Bedminster's AP district, it is noted that this development was also the result of a curative amendment.

Along the Route 611 corridor, industrial zoning is located in both townships. While Plumstead's LI district contains a mix of existing industrial and commercial uses, adjacent land in Bedminster contains an industrial park along Applebutter Road, some commercial uses and agricultural lands. A second industrial park has been approved for development along Township Line Road in Bedminster.

Future land use planning in Plumstead is generally consistent with the Land Use Plan in the *Bedminster Township Comprehensive Plan* (June 2008). Areas in Plumstead designated as Resource Protection and Rural match up fairly well to adjacent areas in Bedminster designated Agricultural Preservation. Likewise, Plumstead's Development District, shown along both sides of Route 611 in the northern portion of the township, is mostly consistent with Bedminster's Industrial Area (a development district). One exception to that is a portion of the Industrial Area which borders an area designated as Rural between Potters Lane and Route 413 in Plumstead.

HILLTOWN TOWNSHIP

Hilltown Township borders the very western portion of Plumstead along Route 313 between Stump Road and Applebutter Road.

Adjacent land in Hilltown along the Route 313 corridor is zoned PC-2 Planned Commercial II which follows the Land Use Plan in the *Comprehensive Plan Update for Hilltown Township* (2003). This district, which extends along much of Route 313 south of Dublin Borough, is intended to provide for small scale "neighborhood" commercial uses. Existing land uses in the PC-2 district are primarily rural residential with a small commercial use and one vacant parcel. Plumstead's abutting RO Rural Residential district is not generally consistent with the commercial zoning in Hilltown. However, Plumstead's existing land uses, all single-family residential with one parcel containing a religious institution, are primarily consistent with adjacent land uses across the border in Hilltown.

It should be noted that beyond the row of parcels fronting directly on Route 313 is Hilltown's RR Rural Residential zoning, a conservation area district which is consistent with Plumstead's RO district.

NEW BRITAIN TOWNSHIP

New Britain Township borders Plumstead to the west. The municipal boundary between both townships runs along Route 313 between Stump and Ferry roads.

Existing land uses in both townships along Route 313 are fairly consistent. Low-density single-family, agricultural, commercial, and protected open space uses abut Plumstead in New Britain's WS Watershed, OP Office Park, and CR Conservation and Recreation zoning districts. Adjacent land uses along this stretch in Plumstead's RO district are primarily single-family residential, agricultural and protected open space. An approved development for 33 single-family dwellings is located along Route 313 in Plumstead directly across from preserved farmland in New Britain. This is located along the municipal border; however, impacts to New Britain should be minimal.

While the first row of properties along portions of Route 313 is zoned OP Office Park much of the land beyond these properties in New Britain is zoned WS Watershed district. The WS district allows uses that provide the maximum opportunities for open space in order to protect sensitive natural features. For a single-family detached dwelling use, New Britain's WS district allows an overall density (80,000 square feet) similar to Plumstead's RO district (87,120 square feet).

DOYLESTOWN TOWNSHIP

Doylestown Township is located to the southwest of Plumstead. Route 313 is the municipal border between both townships from Ferry Road to just east of Campbell Drive in Doylestown Township.

In this area, the Route 313 corridor contains a mixture of uses with mostly residential and agricultural uses closer to the New Britain Township boundary and nonresidential uses closer to the Route 611 corridor. For the most part, existing land uses along each side of Route 611 in this area are consistent.

Single-family residential, institutional, and commercial uses located in Doylestown Township's R1 Residential, C1 Commercial, C4 Commercial, and LI Limited Industrial districts abut Plumstead. Commercial uses located along and nearby the Route 611 corridor in Plumstead are compatible with those in Doylestown, as are the single-family residential and agricultural uses along Route 313 just below the village of Fountainville.

One exception is Plumstead's Patriot's Ridge development along Route 313, a high-density residential land use across from Doylestown's limited industrial district which contains institutional and commercial uses. However, Route 313 and a well-planted buffer adjacent to Patriot's Ridge help to provide a separation between these uses.

A small area in Plumstead along routes 313 and 611 is zoned LI Light Industrial. This particular district consists of approximately three parcels; two of which contain commercial uses and one that

is vacant. This district does not appear to have connection to any other industrial district or use. Due to the small size of the district and lack of existing industrial uses, consideration may be given to integrating this district, through rezoning, into an adjacent district as future land use decisions are made.

BUCKINGHAM TOWNSHIP

Buckingham Township is located along Plumstead's southeastern border extending from Doylestown Township, at Route 313, to the Solebury Township border where Ridgeview Drive curves northwest. The municipal boundary mostly follows Landisville and Ridgeview roads.

Land uses along both sides of the municipal border are a fairly compatible mix of commercial, single-family residential, agricultural, vacant, industrial, and protected open space. Northeast of Burnt House Hill Road, single-family residential uses at varying densities along with some protected open space abut Plumstead in Buckingham's AG-2 Agricultural, R-1 Residential, R-3 Residential, and R-7 Residential districts. Adjacent land uses in Plumstead's RO Rural Residential and R-1 Rural Residential districts, consist of single-family residential, parks and protected open space, agricultural, and several vacant parcels.

At Buckingham's western corner, from Route 313 to the intersection of Old Easton Road and Landisville Road, is the PC-1 district which contains commercial and office uses. Similar uses are adjacent in Plumstead where the C-2 Highway Commercial district contains retail commercial uses. East of the PC-1 district are Buckingham's PI and PI-2 Planned Industrial districts which contain small manufacturers and warehousing, along with scattered single-family residential uses and a rural residential property. This is consistent with small manufacturing and warehouse uses in Plumstead's LI district, located west of the Old Easton Road/Landisville intersection. Plumstead's R-3 Residential district extends from Old Easton Road to Burnt House Hill Road and contains primarily single-family residential uses and a commercial use. While this residential area borders Buckingham's industrial districts, much of this area along Landisville Road in Buckingham is either rural residential, single-family, or proposed parkland.

Future land use planning in both townships is generally consistent. Buckingham's development areas are located adjacent to Plumstead's designated development district. In addition, both townships' designate areas northeast of Route 413 as rural, conservation areas.

There may be opportunities for both townships to cooperate on connecting trails and recreational amenities as well as coordinating transportation improvements. Plumstead's newly developed Allohaken Park, along Bergstrom and Landisville roads, is adjacent to Buckingham. A proposed park is located along Landisville Road in Buckingham, adjacent to the Old Mill Estates development in Plumstead. The proximity of these recreational amenities to nearby residential areas in both townships provides the basis for establishing a regional trail network.

CROSS KEYS GATEWAY

The industrial area near the Doylestown Airport in Buckingham is intended to provide for light industrial and clean technology operations. This area consists of various small to medium-sized manufacturing and warehouse uses along Old Easton Road and the Skyron Aero Industrial Park.

Important to note is the Pennsylvania Biotechnology Center of Bucks County located along Old Easton Road in Buckingham. Located in the township's Planned Industrial district, the Biotechnology Center is a 110,000-square-foot research and education facility that provides space and other resources to biotechnology start-up companies and nonprofit research and outreach organizations. The center is located in a Keystone Innovation Zone (KIZ), which is a statewide initiative created to build knowledge-based economies and cultivate entrepreneurship by establishing relationships between academic centers and emerging industries. An additional incentive for businesses to consider locating in the KIZ is that qualifying companies are eligible for tax credits. As municipal officials consider the future direction of the Cross Keys area of the township, thought should be given to the possibility of expanding the KIZ designation into this region of Plumstead.

SOLEBURY TOWNSHIP

Solebury Township borders Plumstead Township to the east, extending from the Delaware River to just south of Ridgeview Drive. The Paunacussing Creek, which runs along the border in Solebury, provides natural areas which have influenced zoning and development activity in this area.

Land use and zoning along the municipal boundary of these two townships are fairly consistent. A majority of Solebury Township, including the area bordering Plumstead, is zoned RB Residential/Agricultural. Bordering land uses in Solebury are primarily agricultural, rural residential, vacant and some single-family residential. This is consistent with adjacent land use in Plumstead where agricultural and rural residential uses predominate in the abutting RP Resource Protection and RO Rural Residential districts.

Plumstead's Future Land Use Plan recommends Resource Protection Area and Rural Area designations along the Solebury border. This is generally consistent with the intent of Solebury's corresponding future land use designations of Rural Conservation, Site-Responsive Rural Development and Historic Villages (*Comprehensive Plan Solebury Township*, 2002).

REGIONAL PLANNING OPPORTUNITIES

Evaluating land use patterns and land planning efforts across municipal borders provides a basis upon which multimunicipal planning efforts can be established. Identifying various land use topics or issues that are important to one community often results in a realization that the same issue is of similar importance in neighboring communities. As experience has shown, multimunicipal cooperation can potentially provide a reduction in costs for facilities or provision of services.

As part of this comprehensive planning process, a roundtable meeting with neighboring municipalities will be conducted leading to an opportunity to discuss planning and land use issues of mutual concern. Potential issues of common concern to the area include: water resources planning (quality/quantity), source water protection, regional facility for composting and recycling, intergovernmental cooperation agreements, and regional open space and trail planning. These may be possible topics of discussion at the roundtable meeting.

COMPATIBILITY WITH COUNTY PLANNING EFFORTS

The *Bucks County Comprehensive Plan* (1993) provides policy recommendations and guidelines to assist municipalities with managing growth, developing comprehensive plans (and related documents), and evaluating development proposals. The county plan also identifies various planning tools that can be used to manage growth in a manner consistent with sound planning practices. One of the central ideas promoted in the plan is the development district concept, where growth is directed toward areas with available infrastructure and away from areas with important natural and environmental features. Under this approach, higher-density residential and intensive nonresidential developments are channeled into areas where public services can be efficiently and economically provided, thereby preserving the region's significant natural, historic, and scenic resources.

This Plan is consistent with many of the county's community planning policies that are included in the *Bucks County Comprehensive Plan* and promoted by the Bucks County Planning Commission. These policies include the development district concept, protection of natural and historic resources, and village planning principals. This Plan, through its goals, objectives, and recommendations contributes to the achievement of the policies and objectives of the county's comprehensive plan.

It should be noted that Bucks County is currently in the process of updating the county comprehensive plan. The update will place a strong emphasis on sustainability and smart growth development strategies. The *Plumstead Township Comprehensive Plan Update* is consistent with this focus, through its policies of land preservation, natural resource protection, water resources planning, and its primary directive of maintaining a sustainable community for township residents.

COMPATIBILITY WITH OTHER REGIONAL PLANNING EFFORTS

DVRPC – CONNECTIONS: THE REGIONAL PLAN FOR A SUSTAINABLE FUTURE

In 2009, the Delaware Valley Regional Planning Commission (DVRPC) developed *Connections: The Regional Plan for a Sustainable Future*. *Connections* is a long-range plan that outlines a vision for the

future growth and development of the Greater Philadelphia region. Four core principles are established in the plan:

1. Manage Growth and Protect Resources
2. Develop Livable Communities
3. Build an Energy Efficient Economy
4. Establish a Modern, Multinodal Transportation System

The plan designates Plumstead as a growing suburb, with an expectation for additional residential and nonresidential growth. With growth in population, jobs, and land consumption, suburban communities often face problems of traffic congestion, low-density leap-frog sprawl, increased infrastructure demands, and dwindling open spaces. To address these issues, the following strategies for growing suburban areas are established in the plan:

1. Support zoning initiatives to create mixed-use pedestrian-friendly communities.
2. Increase and diversify affordable housing options and locate them closer to employment centers and communities served by public transit.
3. Form partnerships to bring employers and residents to targeted growth areas.
4. Reside in communities where we can meet our needs more efficiently and cost-effectively.
5. Expand local greening initiatives including community gardens, park and trail systems, and green streets and green roofs.

The *Plumstead Township Comprehensive Plan Update* is consistent with the land use element as well as the core planning principles of this regional plan.

In addition, *Connections: The Regional Plan for a Sustainable Future* promotes the development of greenspace networks as a form of public infrastructure that benefits the health, function and sustainability of communities. The 2035 Greenspace Network shown in *Connections* identifies several greenspace corridors that cross through the township: Paunacussing-Pine Run, Peace Valley-Deep Run Creek, Tohickon Creek, and the Delaware River. These corridors are part of the overall regional greenspace network envisioned for the Delaware Valley. DVRPC's recommendations regarding conservation lands and the regional greenspace network are consistent with stated objectives in this Plan to protect important natural resources and provide linear and connecting open space areas for present and future residents to enjoy.

SUMMARY OF RECOMMENDATIONS

- Consider opportunities to coordinate with neighboring municipalities in planning for future land use, park and recreation facilities, and transportation improvements.
- Continue monitoring changes to land use planning and zoning in adjacent communities to access the need to address future conflicts.



Future Land Use Plan

GUIDING PRINCIPLES

The Future Land Use Plan is the central element of this comprehensive plan and encompasses the eight guiding principles that were established in the planning process. An overarching principle of this plan is to promote Smart Growth and Sustainability for future development and activities as shown in the diagram below.



SMART GROWTH AND SUSTAINABILITY

Smart Growth is a response to the modern pattern of development. It is a coordinated, holistic policy of Sustainable Development³² in the context of land use planning, addressing the long-term viability of regional growth patterns and the underlying costs involved. Smart Growth recognizes the importance of land use policy and planning beyond just ‘stopping sprawl,’ and emphasizes the transportation-land use connection. Land use patterns and intensity influence the roadway network. Likewise, the roadway network can influence land uses and development pressures. Just as new or expanded transportation systems create new access opportunities that attract new development, new development patterns create a need for additional transportation facilities. Smart Growth further builds on the Development District concept that has been the foundation of growth management in Bucks County for over 35 years. The Development District concept is a planning tool whose fundamental objective is to concentrate future development in areas best equipped to handle growth (e.g., areas which contain existing or planned water and sewer service), while minimizing land use conflicts and capital costs to residents.

CHARACTERISTICS OF SMART GROWTH

Smart Growth promotes a concentration of development and diversity of uses. The principles of this land use planning strategy are endorsed by various county and state governments, including Bucks County and the Commonwealth of Pennsylvania. The characteristics of smart growth include:

- Compact, efficient development
- Development focused on existing communities
- A mix of uses
- Transportation options
- Walkable communities
- A range of housing opportunities
- Distinctive communities with a strong sense of place
- Protection of resources
- Community collaboration/public process
- Transparent, predictable, cost-effective rules for development

The purpose of the Future Land Use Plan is to establish overall planning policies that will bring the township’s guiding principles and Smart Growth characteristics to fruition. These planning policies are considerate of the analysis, strategies, and recommendations presented in previous chapters as

³² Sustainable Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

well as the results from the resident survey. Generally, the overall goal of the Future Land Use Plan is to direct future development to the best suited areas based upon the type, nature, and density/intensity the development, while preserving the township's important natural, hydrologic, agricultural, historic, and scenic resources. The Future Land Use Plan provides a framework for managing new development, enhancing existing land uses, and protecting resources.

PLANNING AREAS

Plumstead Township has been divided up into four planning areas: Development Area, Villages, Rural Area, and Resource Protection Area. These planning areas reflect recommended land use patterns based on growth management strategies and planning policies. The Delaware River Management Area Overlay District provides additional protection of the inherent natural and scenic resources along the river and its tributaries. Numerous scenic roads which traverse the township are worthy of recognition and possible protection measures. These planning areas, scenic roads, and Delaware River Management Area Overlay District are discussed below and shown in Figure 9, Land Use Plan.

DEVELOPMENT AREA

The purpose of this planning area is to accommodate the bulk of future development and infrastructure expansions. This planning area generally corresponds to the township's designated sanitary sewer district based upon a settlement agreement with Bucks County Water and Sewer Authority. An analysis of the Development Area confirms that Plumstead Township satisfies its fair share housing obligations with a surplus of land available for future development to accommodate future growth projections through 2021, the 10-year timeframe of this comprehensive plan. (See pages 34 through 37).

Generally located between the arterial highways of Routes 611 and 413, the Development Area is well-suited to accommodate future growth. The Development Area contains a wide-range of shopping, employment, services, and institutional uses within a range of residential and nonresidential zoning districts.

Natural and historic resources can be found throughout this planning area, so future development should respect these inherent resources through the implementation of sensitive site design and development practices.

The Development Area is broken into the following sub areas—Residential Areas, 611 Corridor, Town Center, Cross Keys Area, and Industrial Areas.

RESIDENTIAL AREAS

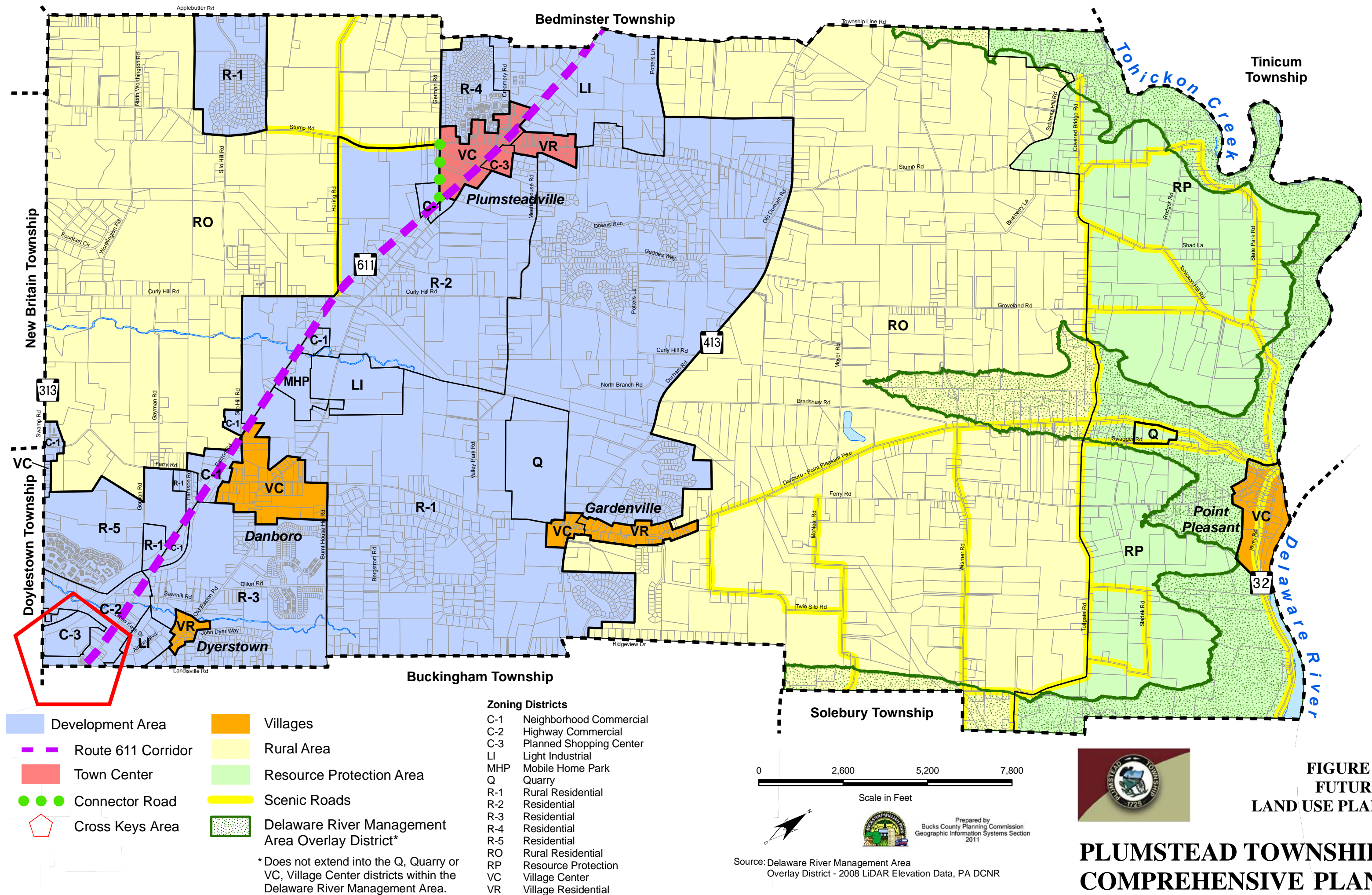
Residential Areas are intended to provide a wide-range of housing opportunities and densities for Plumstead residents. The township's housing provision satisfies the Pennsylvania Municipalities Planning Code (MPC) requirement "to provide for the use of land within the municipality for residential housing 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." The Residential Areas can accommodate a variety of housing types at a variety of densities from 1 up to 10 dwelling units per acres within the R-1, R-2, R-3, and R-4, and R-5 zoning districts. Several types of residential developments that require open space are also permitted.

A significant number of residential subdivisions were constructed over the past 20 years within the Development Area. Many of these developments lack sidewalk or trail connections to adjacent subdivision or nearby points of interest. The township is actively addressing this issue through planning and construction projects for trails and sidewalks. To minimize pedestrian isolation or disconnection in the future, the township emphasizes that planning for pedestrian trails and sidewalks are conducted during the early design stages of subdivision and land development proposals and not as an afterthought. This will ensure that residential subdivisions in the future will provide the appropriate connections to other residential areas and community resources such as schools, parks, and commercial areas. Similarly, the provision of open spaces associated with residential subdivisions should be planned for upfront during the development process so that open spaces are strategically located adjacent to other preserved open spaces. This will create contiguous (instead of fragmented) areas of open that is generally more effective for the protection of natural resources and wildlife habitat.

ROUTE 611 CORRIDOR

U.S. Route 611 is a regional arterial roadway that provides vehicular access to areas throughout Plumstead Township and the region. The Route 611 corridor is the commercial backbone for the township and contains a variety of land uses including residential, nonresidential, rural residential and agricultural within various zoning districts. Strategic planning can improve the appearance and function of this corridor and make it safer to travel, provide an identity to various stretches of the corridor, and create a more attractive place in which to work and shop.

Future development and redevelopment along the corridor should focus on concentrating buildings within planned commercial nodes (versus a continuous strip commercial pattern) within the existing commercial zoning districts. Providing unified building facades which help



* Does not extend into the Q, Quarry or VC, Village Center districts within the Delaware River Management Area.

to create architectural interest, orienting buildings closer to the roadway and locate parking in the side and rear of buildings, and restricting drive-through facilities to the rear of buildings will improve visual character and aesthetics of the corridor.

Other strategies should include incorporating appropriate access management measures, pedestrian connections (on and offsite), and public spaces (when possible) into the site design and layout of proposed development to improve access, mobility, and functionality of the corridor.

Township officials will evaluate potential ordinance amendments and/or design guidelines to improve the visual character and aesthetics of the 611 corridor.

TOWN CENTER

Plumsteadville is one of five villages in the township. However, Plumsteadville's size, predominantly commercial flavor, and location at an intersection on an arterial road lend it great potential for serving as a Town Center, a natural focus of activity. The village also has key historic resources in need of revitalization. Township officials have expressed the desire to see its potential as a central place fully realized.

Future development in and around the village should not only be compatible with the existing character but enhance Plumsteadville as a hub or Town Center. Future development should be considerate of improving sidewalk connections within the village, increasing public parking opportunities, and the providing of a central focal point or village green. Consideration could be given to expanding or rezoning portions of the village and promoting mixed-use and infill development. These issues can be addressed as part of a village study for Plumsteadville. As discussed in the Village Planning chapter, this Plan recommends that a village study be conducted for Plumsteadville to evaluate its potential as a Town Center. Study contents could include an assessment of the suitability of current dimensional standards and zoning designation to compact, mixed-use town center development; examination of directions for potential infill development; recommendations for pedestrian and road improvements; ways to improve visual cohesion and signage; provision of a village green, landscaping and street furniture; and consideration of historic overlay zoning and design guidelines to protect resources.

There are some obstacles for successfully implementing this vision—primarily traffic volume and pedestrian safety through the village. One strategy for alleviating some of the traffic through the center of the Town Center is to construct a reverse frontage road or connector road on the western edge of the VC district boundary. As shown in Figure 9, the proposed connector road is generally aligned as an extension of German Road, linking Stump Road and Route 611. This connector road could relieve some of the congestion along Route 611

while at the same time providing potential access to existing and future development within this area. Sidewalks should be provided within the right-of-way of this road to improve pedestrian access within Plumsteadville. The connector road should be adopted by the township through the Official Map process.

Future development within the Town Center should respect Plumsteadville's historic character and village setting by reflecting the local historic architecture, providing a street network with alleys that reflects a traditional settlement pattern (grid versus cul-de-sac), and incorporating village greens for public gathering places where possible. Plans should emphasize walkability through the provision of sidewalks/trails and traffic calming on roadways in appropriate locations in the Town Center.

CROSS KEYS AREA

The Cross Keys is a place name that lies within several municipalities³³ and also serves as gateway into Plumstead Township from points south. Within Plumstead, Cross Keys contains a variety of commercial uses including auto dealerships, auto repair, auto paint shops, retail, and shopping center; however, the area contains underutilized lots and lacks a sense of cohesion or identity. The primary zoning districts in Plumstead is C-2, Highway Commercial, along with some land zoned C-3, Shopping Center and LI, Light Industrial.

As an effort to promote economic activity and a business-friendly corridor, township officials may consider re-examining the vision of the Cross Keys area. For instance, as an effort to promote economic activity and a business-friendly corridor, consideration should be given to providing for additional land uses that would be consistent with the intent of the district. Uses such as office/business parks, would complement the mix of uses along this corridor and, with appropriate design criteria, could provide a boulevard-type atmosphere. Regulations to affect permitted uses in this area of the township may be better accomplished through use of an overlay zoning district specific to this area.

Township officials wish to explore regional planning strategies with the other municipalities in the Cross Keys area to strengthen the identity and marketability of the area. For instance, the Keystone Innovation Zone (KIZ) located in the Pennsylvania Biotechnical Center of Bucks County in Buckingham Township could be expanded into Plumstead. This expansion could provide job opportunities and help to create new businesses in the township. Even without formal KIZ designation, Plumstead could foster a symbiotic relationship with Buckingham's KIZ by ensuring the underlying zoning in Cross Keys allows the same industries targeted for the KIZ—life sciences and information technology—and promoting new development or

³³ Cross Keys is shared by four municipalities: Doylestown Township, Doylestown Borough, Plumstead Township, and Buckingham Township.

redevelopment for this purpose. Multi-municipal planning and cooperation may also be used to identify strategies for improving traffic circulation and access management in the Cross Keys could be address for improved mobility, safety, and overall appeal of the area.

INDUSTRIAL AREAS

The purpose of Industrial Areas is to provide for the continuation and reasonable expansion of existing industries and the establishment of new industries within the existing industrial areas of the township. Although the LI, Light Industrial zoning district is associated with this land use classification, there is an active quarry in the Quarry District west of Gardenville on the northern side of Danboro-Point Pleasant Pike.

The Plumsteadville Industrial Park in the northern Route 611 corridor is the township's primary industrial area. The Central Bucks Industrial Aero Park is located in the southern portion of the Route 611 corridor gaining access from Cross Keys Drive. A third sizeable industrial area is located along Old Easton Road, south of North Branch Creek.

Future development in these areas should continue to maintain high standards of site design and layout exhibited throughout the township's industrial areas. Generous landscape buffers and/or berms should be provided adjacent to Residential Areas to minimize land use conflicts.

VILLAGES

The Villages within Plumstead represent an important part of the township's history and heritage. The character of the township would be permanently altered or lost if these historic settlements were to be become overshadowed or engulfed by incompatible development. Preserving the integrity of these villages should be paramount when planning for their future. Four of the five villages in the Plumstead are located in the Development Area. The village of Plumsteadville is discussed in the Town Center planning area above. The remaining four Villages are included in their own planning area as discussed below.

The village of Dyerstown contains the VR, Village Residential zoning district. The villages of Danboro and Point Pleasant are encompassed by the VC, Village Center zoning district. Gardenville contain both the VR and VC districts. Both village zoning districts permit residential densities up to 7 dwelling units per acre with a variety of residential and nonresidential uses, although more nonresidential uses are permitted in the VC district. With limited land available, there are various developable parcels in all four villages that could result in a significant number of additional residential units, given the permitted higher densities with the village zoning districts. Therefore, it is imperative that future infill development and adaptive reuse of structures is compatible the village character. Future development in and around Village Centers should reflect the local historic

architecture and includes a street network reminiscent of historic village settlements such as grid street network and alleys would complement the village setting.

As discussed in the Village Planning chapter, village studies are recommended for Gardenville and Point Pleasant. The VR and VC district regulations should be examined for all villages to evaluate, for instance, the appropriateness mixed use (residential and nonresidential) in one building), provision of open space or village greens, provision of a village viewshed overlay district, and traffic calming techniques if appropriate.

RURAL AREA

The purpose of this planning area is to maintain and enhance the rural character, provide low-density residential development, and protect the agricultural industry and inherent natural resources. The Rural Area corresponds to the zoning district by the same name, and permit residential lots of sufficient area to provide for on-lot water and sewage disposal systems (2 acres or larger) as well as a variety of agrarian uses and accessory farm businesses. There are two separate Rural Areas—one on the eastern side of the Development Area and one on the western side.

The majority of the Rural Area with the township contains soils classified as Farmland of Statewide Importance by the U.S. Department of Agriculture, Natural Resources Conservation Service. Throughout Plumstead Township, there are also Prime Agricultural Soils but they are much more limited in area. While many of the active agricultural areas are protected through the placement of conservation easements, most are not. The Township's Land Preservation Program has been an effective tool in preserving farms that have been permanently preserved by municipal conservation easement. A technique that has been used by adjacent communities (i.e., Bedminster, Buckingham, East Rockhill, and Tinicum townships) to preserve agricultural resources is agricultural zoning applied as either a district, overlay zoning district, or as part of their natural resource protection standards. Township officials can explore the provision of agricultural zoning as additional means of agricultural protection within appropriate areas of the Rural Areas. (For more details on agricultural zoning techniques, refer to the Open Space and Recreational Resources chapter.)

The Rural Areas on both the eastern side and western side of the township contain Conservation Landscapes as identified in the *Bucks County, Pennsylvania, Natural Areas Inventory Update* (2011). Lower Tohickon Creek and Paunacussing Creek Conservation Landscapes are located in the designated Rural Area on the eastern side of the township and Lake Galena – Pine Run Conservation Landscape is located in the western side. Conservation Landscapes are natural resource areas of high natural biodiversity located along riparian corridors and on rocky ridges and areas of high natural biodiversity.

Future development and activities within Rural Areas should be respectful of the bucolic character and maximize protection of the agricultural, natural, and scenic resources.

RESOURCE PROTECTION AREA

This planning area contains the highest concentration of sensitive natural resources in the township. The purpose of the Resource Protection Area is to preserve the sensitive natural features and scenic beauty of the area including wetlands, woodlands, floodplains, and steep slopes associated with the palisades of the Delaware River and bluffs along Tohickon Creek corridor. Future development within the Resource Protection Area should only include uses and activities that will complement these sensitive resources.

The Resource Protection Area corresponds to the zoning district by the same name, and permits a limited range of low-intensity uses such as agricultural and farm-related businesses as well as single-family residential lots (2 acres or larger in area). Due to the high concentration of sensitive natural resources found in this planning area, heightened protection standards are required.

The Resource Protection Area includes portions of the Lower Tohickon Creek and Paunacussing Creek Conservation Landscapes as identified in the *Bucks County, Pennsylvania, Natural Areas Inventory Update*. Since Conservation Landscapes contain natural resource areas of high natural biodiversity and high natural biodiversity, preservation of these areas are paramount.

DELAWARE RIVER MANAGEMENT AREA OVERLAY DISTRICT

In order to support of the *Lower Delaware River Wild and Scenic River Management Plan* (1997), the Delaware River Management Area Overlay District was established.³⁴ The purpose of this planning area is to provide additional protection measures for the sensitive natural resources located along the Delaware River and its tributaries as defined by the River Management Overlay District. This overlay district provides resource protection standards in addition to those required in the underlying zoning districts—RO, Rural Residential and RP, Resource Protection districts. This heightened protection is consistent with the township’s environmental protection policies and supporting plans including the *Lower Delaware River Wild and Scenic River Management Plan* and the *Bucks County, Pennsylvania, Natural Areas Inventory Update*. As discussed in the Natural Environment and Natural Systems chapter, township officials will re-examine the purpose and intent of the Delaware River Management Area Overlay District when applied in tandem with the RP and RO districts, to determine appropriate standards that afford maximum protection.

SCENIC ROADS

There are various roads within Plumstead that are classified as scenic by the township. A Scenic Road is defined as any road that passes through agricultural land or abuts a historic building or structure listed on the National Register of Historic Places or the State Register of Historic Places or

³⁴ The River Overlay District does not extend into the Q, Quarry District or the VC, Village Center District within the Delaware River Management Area.

affords vistas of forests with mature trees, notable geologic or other natural features. The scenic road designation means that any further alteration or improvement on that section should maintain the character of the road. Scenic Roads are characterized by their special visual attributes or scenic values and should be protected accordingly.

These scenic values include entrances to historic villages and scenic vistas from roadways including historic structures, historic sites, streams, valleys, fields and hillsides. The following protection standards are recommended for Scenic Roads:

- Site development as to preserve the views of the landscape from the roadway where possible;
- Preserve existing tree lines along roadways;
- Promote the use of native vegetation using a natural appearance, rather than uniform standards;
- Preserve views from the roadways to maintain views of historic sites and/or structures;
- Integrate significant landscape forms, such as hedgerows, hillsides, and stream valleys into the development;
- Limit street lights;
- Provide sidewalks only when appropriate;
- Use appropriate guiderail treatments; and
- Forbid billboards along scenic roads.

This plan recommends that township officials consider ordinance amendments to protect the scenic value of these roadway segments. Future development should apply these protection standards into the site design and layout.

SUMMARY OF RECOMMENDATIONS

The following are a summary of the recommendations for the Future Land Use Plan chapter:

DEVELOPMENT AREA

- Concentrate residential and nonresidential development with the Development Area so that future growth will be coordinated with the provision of public services.
- Ensure that future development is considerate of inherent natural, historic, and scenic resources through the implementation of sensitive site design and development practices.
- Continue satisfying the township's legal obligations to meet its fair share housing obligations by satisfying projected housing demands through 2021.

RESIDENTIAL AREAS

- Plan for and provide pedestrian sidewalks and trails during the early design stages of subdivision and land development process to provide appropriate connections to other residential areas and community resources such as schools, parks, and commercial areas.

- Strategically locate open spaces associated with residential subdivisions to create contiguous (versus fragmented) areas of protected lands for the protection of natural resources and wildlife habitat.
- Amend the Site Analysis and Resource Conservation Plan requirements in the subdivision and land development ordinance to ensure that the optimal placement of trails, sidewalks, and open spaces are considered during the site design process.

ROUTE 611 CORRIDOR

- Concentrate future development and redevelopment within planned commercial nodes (versus continuous strip commercial pattern) along the corridor within existing commercial districts.
- Ensure that building facade create architectural uniformity, buildings are oriented closer to the roadway, parking is located in the side and rear of buildings, and drive-thru facilities are restricted to the rear of buildings to improve visual character and aesthetics of corridor.
- Incorporate appropriate access measurement measures, pedestrian connections (onsite and offsite), and public spaces (when possible) into the site design and layout of proposed developments to improve access, mobility, and functionality of the corridor.
- Evaluate potential ordinance amendments and/or design guidelines to provide improved visual character and aesthetics to the 611 corridor.

TOWN CENTER

- Promote future development that is not only compatible with the existing village character but enhances Plumsteadville's potential as a central place or Town Center of the township.
- Conduct a village study as part of promoting Plumsteadville as a Town Center.
- Evaluate the feasibility of using an Official Map for the provision of a connector (reverse frontage) road connecting Stump Road and Route 611.

CROSS KEYS AREA

- Develop the vision for the Cross Keys area and establish strategies through the establishment of design criteria and/or zoning amendments for its successful implementation.
- Engage with the other three municipalities in the Cross Keys area regarding multi-municipal planning strategies such as the expansion of the Keystone Innovation Zone (KIZ) or compatible zoning and improving traffic movements and circulation.
- Coordinate with the Pennsylvania Department of Community and Economic Development (DCED) and Pennsylvania Biotechnology Center of Bucks County to determine the feasibility expanding the KIZ into the Cross Keys area.

INDUSTRIAL AREAS

- Maintain high standards of site design and layout exhibited throughout the township's industrial areas with future development plans.
- Provide generous landscape buffers and/or berms adjacent to Residential Areas to minimize land use conflicts.

VILLAGES

- Promote future development in and around Villages that is compatible with the existing village character by reflecting local historic architecture, incorporating a street network reminiscent of historic settlements (e.g., grid network and alleys), and providing strategically located open spaces or village greens.
- Conduct a village study for Gardenville and Point Pleasant.
- Examine the VR, Village Residential and VC, Village Center district regulations within all villages to evaluate the appropriateness of mixed uses (residential and nonresidential) in one building, provision of open space or village greens, and creation of a village viewshed overlay district.

RURAL AREA

- Maintain and enhance the rural character, provide low-density residential development and protect the agricultural land uses and inherent natural resources.

RESOURCE PROTECTION AREAS

- Preserve the inherent natural features and scenic beauty of the area and provide land uses and activities that complement these sensitive resources unique to the township.
- Provide heightened resource protection standards to promote and enhance their protection.

DELAWARE RIVER MANAGEMENT AREA OVERLAY DISTRICT

- Preserve and enhance the protection of sensitive natural resources located along the Delaware River and its tributaries.
- Re-examine the purpose and intent of the Delaware River Management Area Overlay District when applied in tandem with the RO, Rural Residential and RP, Resource Protection districts to determine appropriate standards that afford maximum protection.

SCENIC ROADS

- Encourage future development to preserve the views of the landscape and from designated scenic roadways.
- Evaluate necessary amendments to protect the scenic values of designated Scenic Roads.

Chapter 10

Plan Recommendations

Plumstead Township has identified eight principles that will be used to guide the future actions and decisions. The following summarizes this Plan's recommendations by primary topics or chapters and its corresponding principle or principles. The entity or entities responsible for completing each recommended action is identified along with the estimated timeframe for completing the task. Timeframes are broken into S—short term (0-2 year), M—mid-term (3-5 years), L—long term (6-10 years), and O—ongoing actions.

Township officials can maintain a digital spreadsheet of these recommendations and can sort this table based upon the priority placed upon the individual tasks at any given time. A column has been provided to record the progress of each action and to provide notations if necessary.

HOUSING (PAGES 27 – 37)

Principle: Enhance the Image and Sense of Community

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Monitor and revise where necessary the zoning ordinance to ensure continued suitability of residential use types and complementary accessory uses.	BOS, PC				X	
2. Support public and private efforts to rehabilitate and maintain housing stock, including, but not limited to, disability-adaptive improvements, rehabilitation of owner-occupied and rental properties, code enforcement, and historic preservation. Give particular attention to maintenance of entry-level rental and other housing.	BOS, PC				X	
3. Evaluate the potential for mixed use arrangements that would permit rental units (apartments) and office/retail establishments within the same structure in village centers or other appropriate areas within the township.	BOS, PC		X			

HOUSING (CONTINUED) (PAGES 27 – 37)

Principle: Enhance the Image and Sense of Community

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
4. Consider proposals for age-restricted and age-targeted residential development, appropriately situated near infrastructure and community services. Encourage submittals of such proposals, incorporating site analysis and resource conservation plans, at the sketch plan stage.	BOS, PC				X	
5. Perform a Development Area analysis every 5 years to ensure there is adequate land available for future development.	BOS, PC, CP		X			

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
CP	Consulting Planners	L	Long Term
		O	Ongoing

NONRESIDENTIAL DEVELOPMENT (PAGES 37 – 45)

Principle: Ensure the Economic Vitality of the Community

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Promote planned commercial nodes along commercial corridors emphasizing unified architectural theme and building facades, pedestrian interconnections, and public spaces when possible.	BOS, PC				X	
2. Review ordinance regulations to ensure that sufficient standards are provided to promote attractive, well-planned development that will meet the commercial and service needs of the community.	BOS, PC, TE	X				
3. Consider adopting basic access management controls in line with standards provided in PADOT's access management model ordinance.	BOS, PC, TE	X				
4. Align the township's ordinances (in coordination with surrounding municipalities) with the vision of the Cross Keys area by providing additional uses/regulations to enhance economic development opportunities.	BOS, PC, TE, CP	X				
5. As part of conducting a village zoning study for Plumsteadville, examine opportunities to expand this village into a town center or hub.	BOS, PC, CP	X				
6. Continue to foster additional job creation in an effort to provide business employment opportunities for local residents.	BOS, PC				X	

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
TE	Township Engineer	L	Long Term
CP	Consulting Planners	O	Ongoing

TRANSPORTATION (PAGES 47 – 57)

Principle: Improve Mobility

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Incorporate land use considerations into transportation planning and ensure that transportation facilities have adequate capacity to meet demand.	BOS, PC, TE				X	
2. Work with Bucks County Planning Commission to develop list of transportation projects for County Transportation Improvement Program (CIP).	BOS, PC, TE, BCPC		X			
3. Encourage traffic calming in new developments (when appropriate).	BOS, PC				X	
4. Preserve and create rights-of-way for trails and pedestrian use.	BOS, PC				X	
5. Develop a township Bicycle Plan.	BOS, PC, PRC, TE		X			
6. Encourage walking by requiring sidewalks or bike/hike paths as part of all new developments.	BOS, PC				X	
7. Develop an Access Management Plan.	BOS, PC, TE	X				
8. Investigate the possibility of using the Official Map provisions of the Municipalities Planning Code to support access management initiatives.	BOS, PC, TE	X				
9. Support additional public transportation service expansions, especially those which would help older members of the community.	BOS, PC				X	
10. Develop specific policies regarding traffic calming.	BOS, PC, TE		X			
11. Use a context sensitive design approach as roadways and bridges in the township are being considered for reconstruction or replacement.	BOS, PC				X	

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
TE	Township Engineer	L	Long Term
CP	Consulting Planners	O	Ongoing
PRC	Park and Recreation Committee		
BCPC	Bucks County Planning Commission		

NATURAL ENVIRONMENT AND NATURAL SYSTEMS (PAGES 59 – 75)

Principle: Protect Natural Resources

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Continue to maintain current protection standards for steep slopes, woodlands, lakes and ponds, floodplain areas, and wetlands.	BOS, PC				X	
2. Implement the pertinent recommendations outlined in the <i>Environmental Resource Inventory</i> including the review of additional measures that would strengthen the natural resource protection standards.	BOS, PC		X			
3. Re-examine the purpose and intent of the Delaware River Management Area Overlay District when applied in tandem with the RP and RO districts, to determine appropriate protection standards and provide ordinance amendment if appropriate.	BOS, PC, TE	X				
4. Amend the zoning ordinance and zoning map to reference DCNR's PAMAP LiDAR data as the mapping source for defining the Delaware River Management Area Overlay District.	BOS, PC, TE	X				
5. Consider incorporating riparian buffer standards consistent with the state's current recommendations, including protection standards for headwater areas and first order streams.	BOS, PC, TE	X				
6. Revise the zoning ordinance to incorporate a definition of hydric soils utilizing the most recent updated soils information from the Natural Resource Conservation Service (NRCS).	BOS, PC, TE	X				
7. Revise plan submission requirements in the subdivision and land development ordinance to require subdivision and land development plans show Proposed Conservation Areas designated in the <i>Bucks County, Pennsylvania Natural Areas Inventory Update</i> (where applicable).	BOS, PC, TE	X				
8. Continue to utilize the expertise of the Environmental Advisory Council (EAC) and promote their environmental stewardship.	BOS, EAC				X	
9. Monitor potential funding that may be available under the Highlands Conservation Act.	TA, EAC				X	
10. Consider pursuing funding that may be available under the River Conservations Plan for suitable projects when determined applicable.	TA, EAC				X	

NATURAL ENVIRONMENT AND NATURAL SYSTEMS (CONTINUED) (PAGES 59 – 75)

Principle: Protect Natural Resources

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
11. Review recommendations from the Growing Greener Ordinance Assessment and determine which ones have merit for implementation.	BOS, PC, TE		X			
12. Consider incorporating Low Impact Development (LID) techniques into the zoning and subdivision and land development ordinances.	BOS, PC, TE		X			
13. Continue land preservation program efforts in a way that preserves the important natural resources within the township. (See Chapter 4, Open Space and Recreational Resources).	BOS, PC, TA				X	

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
TE	Township Engineer	L	Long Term
EAC	Environmental Advisory Council	O	Ongoing
TA	Township Administration (may include staff, manager, or zoning officer, etc.)		
CP	Consulting Planners		

OPEN SPACE AND RECREATIONAL RESOURCES (PAGES 77 – 103)

Principles: Preserve Open Space and Protect Agriculture; Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Open Space and Agricultural Resources						
1. Continue collaboration among county, state and local programs, and with other municipalities, to preserve farmland, open space, and natural areas through easement acquisition.	BOS, PC, TA				X	
2. Focus farmland preservation activity on large farms west of Easton Road and east of Route 413, and on other areas identified in the township's <i>Open Space Plan</i> .	BOS, PC, TE, TA				X	
3. Focus natural areas (open space) preservation on scenic, environmentally sensitive land in the eastern part of the township, as identified in the township's <i>Open Space Plan</i> .	BOS, PC, TE, TA				X	
4. Review overall open space standards for appropriateness, with particular attention to adequacy of provisions for smaller multifamily and attached residential developments and village-type development.	BOS, PC, TE	X				
5. Consider extending the farmer's right-to-farm notification to other appropriate districts in which farm and farm-related activities are present, such as the RP, Resource Protection District.	BOS, PC, TE		X			
6. Continue to monitor use provisions and other zoning regulations to ensure their ability to support various types of agriculture and related accessory uses and services, such as farm stands, supply stores, and feed operations.	BOS, PC, TA				X	
7. Evaluate the Transfer of Development Rights (TDR) program for refinement that may make it more useful for farmland preservation.	BOS, PC, TE	X				
8. Explore the provision of agricultural zoning as additional means of agricultural protection within appropriate areas of the township.	BOS, PC, TE		X			
9. Encourage community supported agriculture (CSAs), specialty farming, farmers' markets, and farm tourism or agritainment as activities that support farming.	BOS, TA				X	
10. Monitor municipal ordinances and permit regulations to ensure that horse farms continue to enable related equine facilities, amenities and activities, such as bridle trails, stables, buffers and fencing.	BOS, PC, TA				X	

OPEN SPACE AND RECREATIONAL RESOURCES (CONTINUED) (PAGES 77 – 103)

Principles: Preserve Open Space and Protect Agriculture; Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Open Space and Agricultural Resources (continued)						
11. Continue the establishment of co-easements of preserved properties.	BOS, PC				X	
12. Adopt a scenic setback ordinance to protect scenic open space and farmland.	BOS, PC, TE		X			
13. Establish a township land preservation committee in connection with continuing efforts to publicize land preservation programs and conduct stewardship education initiatives.	BOS, PC, EAC	X				
Park and Recreational Resources						
14. Utilize information in the <i>Park Inventory and Analysis</i> (2010) in conjunction with developing a Master Plan for township parkland or as part of an updated <i>Park and Recreation Plan</i> .	BOS, PC, PRC, CP			X		
15. Update the <i>Plumstead Township Park and Recreation Comprehensive Plan</i> (1991) to account for changes that have occurred in land use activity and township-owned park and recreation land.	BOS, PC, PRC, CP		X			
16. Conduct a community survey specific to park and recreation interests as part of the <i>Park and Recreation Plan</i> update.	BOS, PC, PRC, CP		X			
17. Update the <i>Plumstead Township Greenway and Trail Linkage Feasibility Study</i> (2001) to account for new developments and changes.	BOS, PC, PRC, CP	X				
18. Continue cooperating with the state, county, and adjacent municipalities for the acquisition and development of a regional greenway corridor and trail network.	BOS, PC				X	
19. Move forward with implementing the stated objectives and recommendations in the township's <i>Open Space Plan</i> related to park and recreational resources.	BOS, PC	X				
20. Continue to promote the cooperative use of school district facilities to supplement the township's existing park and recreation resources and provide a cost-efficient use of these facilities for community activities.	BOS, PC, PRC				X	
21. Coordinate planning and construction of bike route facilities on state routes with PADOT.	BOS, PC, PRC		X			
22. Continue to require sidewalks and bike paths as development is proposed to encourage linkage with surrounding pedestrian and bikeway routes.	BOS, PC, PRC				X	

OPEN SPACE AND RECREATIONAL RESOURCES (CONTINUED) (PAGES 77 – 103)

Principles: Preserve Open Space and Protect Agriculture; Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Open Space and Agricultural Resources (continued)						
23. Examine the feasibility of providing equestrian trails in strategic location within the township.	BOS, PC, PRC, PW	X				
24. Consider providing mini-parks (e.g., tot lots, improvements such as benches and gazebos) on township open space areas within residential developments that could serve residents in the immediate area.	BOS, PC, TE, PRC, PW		X			

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
PRC	Park & Recreation Committee	L	Long Term
TA	Township Administration (may include staff, manager, or zoning officer, etc.)	O	Ongoing
EAC	Environmental Advisory Council		
TE	Township Engineer		
PW	Public Works		
CP	Consulting Planners		

HISTORIC AND SCENIC PRESERVATION (PAGES 105 – 115)

Principle: Protect Historic and Scenic Resources

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Update the township's historic resource inventory.	CP, HAC			X		
2. Implement the preservation program outlined in the <i>Comprehensive Historic Resource Plan</i> (2006).	BOS, PC			X		
3. Evaluate the completion of National Register nominations for resources determined to be eligible.	CP, HAC			X		
4. Evaluate the feasibility of designating the Danboro, Dyerstown, and Point Pleasant historic districts as Act 167 districts.	CP, HAC			X		
5. Continue the historic marker program.	BOS, PW				X	
6. Review zoning ordinance provisions for use types to determine whether added uses, relocation of uses or other changes are desirable to bolster protection of historic resources and districts through adaptive reuse, particularly in village and agricultural zones.	BOS, PC, TE, CP		X			
7. Consider instituting additional preservation measures such as overlay districts and design guidelines where appropriate to supplement existing regulations or extend preservation protections.	BOS, PC, TE, CP		X			
8. Monitor physical conditions of historic properties. Work with owners and enforce zoning and property maintenance codes as necessary, to avoid losing historic buildings to demolition by neglect. Where possible, enlist municipal agencies and community groups in finding buyers and productive uses for vacant village structures.	BOS, PC, TA, HAC				X	
9. Evaluate the feasibility of adopting overlay zoning for the protection of the township's designated scenic roads.	BOS, PC, TE, CP			X		

HISTORIC AND SCENIC PRESERVATION (CONTINUED) (PAGES 105 – 115)

Principle: Protect Historic and Scenic Resources

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
10. Continue to support the designation of River Road as a Scenic Byway.	BOS, PC				X	

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
HAC	Historic Advisory Committee	L	Long Term
TA	Township Administration	O	Ongoing
PW	Public Works		
TE	Township Engineer		
CP	Consulting Planners		

VILLAGE PLANNING (PAGES 117 – 130)

Principles: Protect Historic and Scenic Resources; Enhance the Image and Sense of Community

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Conduct a village study for Plumsteadville to evaluate its potential as a town center. Study contents could include an assessment of the suitability of current dimensional standards and zoning designation to compact, mixed-use town center development; examination of directions for potential infill development; recommendations for pedestrian and road improvements; ways to improve visual cohesion and signage; provision of a village green, landscaping and street furniture; and consideration of historic overlay zoning and design guidelines to protect resources.	BOS, PC, TE, CP		X			
2. Conduct a village study for Gardenville to evaluate the appropriateness of the village zoning district boundaries and identification of the village viewshed and appropriate protection measures.	BOS, PC, TE, CP			X		
3. Consider a joint village study for Point Pleasant with Tinicum Township to explore compatibility of zoning and land use, historic and open space preservation, walkability and traffic calming, among other concerns	BOS, PC, TE, CP			X		
4. Consider using decorative markers and landscaping where possible to mark all primary village entrances. The historical marker grant program of the Pennsylvania Historical and Museum Commission may be a source of assistance for this activity.	BOS, PC, PW		X			
5. Continue to protect villages and their viewsheds by encouraging participation in farmland and open space preservation programs by owners of property adjoining villages and their viewsheds.	BOS, PC				X	
6. Evaluate the township's villages to determine whether the provision of a village viewshed overlay district is appropriate.	PC, HAC, TE, CP		X			
7. Examine the feasibility of providing traffic calming techniques for village areas.	TE, CP		X			
8. Consider the use of an Official Map for the provision of a reverse frontage road to provide a connection between Stump Road and Route 611 within Plumsteadville.	BOS, PC, TE		X			

VILLAGE PLANNING (CONTINUED) (PAGES 117 – 130)

Principles: Protect Historic and Scenic Resources; Enhance the Image and Sense of Community

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
9. Review buffering requirements in the subdivision and land development ordinance to see whether hedgerows or other forms of landscaped buffers should be required at village district boundaries. Continue to enforce existing buffering standards for farmland and open space.	BOS, PC, TE		X			
10. Review VR and VC zoning district to ensure appropriateness of uses and dimensional standards. The review should include consideration of these specific areas: <ul style="list-style-type: none"> new uses or adjustments to existing standards to further promote adaptive reuse of historic buildings; open space standards; TND provisions; and provision of mixed use (residential/nonresidential) within one building. 	BOS, PC, TE, CP	X				
11. Evaluate ways of improving pedestrian mobility and connectivity in areas of heavy foot and vehicular traffic, or in other cases where the need for such improvements exists (e.g., Plumsteadville, Point Pleasant).	BOS, PC, TE		X			

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
HAC	Historic Advisory Committee	L	Long Term
TE	Township Engineer	O	Ongoing
CP	Consulting Planners		

COMMUNITY FACILITIES (PAGES 131 – 174)

Principle: Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Water Supply and Protection						
1. Continue to implement water resources management and protection measures/programs to protect Plumstead's water quality and quantity.	BOS, PC, TE, CH				X	
2. Encourage and promote an Integrated Water Resources Planning approach that promotes land development, water supply, stormwater, and wastewater techniques that maintain the natural functions of the hydrologic cycle.	BOS, PC				X	
3. Prohibit incompatible uses near surface water and preserve and manage groundwater recharge areas to ensure a sustainable water supply. Protect surface water and groundwater from point and non-point source pollution, over-withdrawal and potential sources of contamination via source water protection planning.	BOS, PC				X	
4. Continue to manage future growth based upon the carrying capacity of the underlying aquifer on a site-by-site basis to ensure adequate supply water for township resident.	BOS, PC, CH				X	
5. Implement the recommendations from the <i>Plumstead Township Groundwater Study</i> (2008).	BOS, PC, TE		X			
6. Cooperate with state, county, and municipal government officials to help implement appropriate recommendations of the Pennsylvania State Water Plan (Act 220).	BOS, PC				X	
7. Preserve groundwater resources by preserving open spaces, recharge areas, protecting areas around wellheads, and balancing water demand with water supply. Land should be preserved throughout the township as a means of protecting groundwater supplies and recharge areas.	BOS, PC				X	
8. Review periodically, and update as necessary, municipal ordinance language related to water resource protection.	BOS, PC, TE, CH			X		
9. Work with willing landowners in pursuing preservation measures taking into account available funding, landowner needs, and township goals.	BOS, TA				X	
10. Continue to work with adjacent municipalities with regard to water supply issues.	BOS, PC, TE				X	

COMMUNITY FACILITIES (CONTINUED) (PAGES 131 – 174)

Principle: Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Water Supply and Protection (continued)						
11. Maximize the efficiency of water supply systems and protect water quantity by maintaining water lines and promoting water conservation. Implement procedures to correct existing facility deficiencies and improve facility capacity.	TA, PW				X	
Stormwater Management						
Regulations						
12. Update the stormwater management ordinance to be consistent with the new state water quality standards when they are issued.	BOS, PC, TE				X	
13. Continue to encourage new development projects to incorporate low impact development (LID) techniques to assist in meeting the stormwater management requirements.	BOS, PC, TE				X	
14. Evaluate the need to develop a stormwater site plan alternative for small residential projects which would not require engineering.	BOS, PC, TE		X			
Education						
15. Involve the public in stormwater management by targeting younger audiences, i.e. partnering with public schools, to participate in stormwater educational activities.	BOS, PC, TA				X	
16. Continue to inform residents how they can play a role to help reduce pollutants from draining into the streams through publications and posting information on the township's website. Adding content to the township's website including do-it-yourself BMPs and a summary of the township's stormwater management responsibilities will help to supplement what is currently presented.	BOS, PC, TA				X	
Operation and Maintenance						
17. Develop Operation & Maintenance plans for all township-owned stormwater best management practices (BMPs) which would detail regularly scheduled inspections and maintenance.	BOS, PC, TE	X				

COMMUNITY FACILITIES (CONTINUED) (PAGES 131 – 174)

Principle: Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Stormwater Management (continued)						
<i>Operation and Maintenance (continued)</i>						
18. Move forward with the plan to develop a BMP tracking database to better monitor the operation, maintenance, and function of public and privately owned post-construction BMPs. This database would not only help the township stay on top of scheduling O&M, but also determine if problematic BMPs need remediation.	BOS, PC, TE		X			
<i>Prioritize Problem Areas</i>						
19. Continue efforts to locate illicit discharges and further these efforts by detecting and prioritizing stormwater problem areas, including obstructions and drainage problems. The tracking database can also be utilized to track those problem areas either found by township officials or reported by the public.	BOS, PC, TE, PW		X			
20. Evaluate problematic BMPs and other drainage problems for remediation and improvement.	BOS, PC, TE, PW		X			
Wastewater Facilities						
21. Continue seeking long-range solutions for sewage disposal capacity and the revise township's ACT 537 plan as the result of new agreements or amendments.	BOS, PC, TE, CP		X			
22. Continue monitoring the extent of on-lot disposal system (OLDS) malfunctions, potential wastewater facility alternatives to address areas of concentrated malfunctions, and funding sources to offset the cost of any construction alternatives.	TA, TE, CP				X	
23. Consider ordinance provisions requiring that all new lots served by an OLDS have a primary disposal area and reserve (set aside) disposal area suitable in area and containing appropriate soils, should the primary disposal area need to be replaced.	BOS, PC, TE		X			
24. As part of a public information effort, disseminate educational materials to residents on a periodic basis as a reminder of the need for proper operation and maintenance of OLDS.	BOS, PC, TA				X	

COMMUNITY FACILITIES (CONTINUED) (PAGES 131 – 174)

Principle: Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Wastewater Facilities (continued)						
25. Similar to other on-lot facilities, specify the process to be followed for any malfunctioning small-flow or spray irrigation systems.	BOS, PC, TE		X			
Solid Waste Management						
26. Review existing requirements, including the new Act 140 rules.	BOS, TA	X				
27. Establish relationships with township haulers to identify differences in service levels.	BOS, TA		X			
28. Standardize service levels across haulers for residential and commercial activities.	BOS, TA		X			
29. Research contract collection to allow possible alternative collection practices (i.e., single-stream).	BOS, TE			X		
30. Expand the township's education obligation to reach all residents and business owners.	BOS, TA	X				
31. Consider staff training on current waste issues through one of several professional organizations.	BOS, TA		X			
Township Administration						
32. Consider the possible need in the future to hire an employee to oversee the township's expanding park and recreation program.	BOS, TA		X			
33. Continue to evaluate ways to streamline township operations while continuing to provide the necessary community services.	BOS, TA				X	
34. Consider current equipment needs of the Public Works department in light of municipal budget constraints.	TA, PW	X				
Police Services						
35. Monitor development activity closely to ensure that needs for police protection is adequately provided.	TA, PD				X	
Fire Protection Services						
36. Assist local fire companies in volunteer recruitment efforts to meet staffing needs and continue to assist the companies with the financial challenges and needs they face.	BOS, TA				X	

COMMUNITY FACILITIES (CONTINUED) (PAGES 131 – 174)

Principle: Build and Maintain Livable Communities

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Fire Protection Services (continued)						
37. Work with local fire companies to ensure adequate water supply for fire protection for existing and proposed developments.	BOS, PW				X	
Emergency Medical Services						
38. Continue to coordinate with local emergency providers to ensure the provision of emergency services in the most efficient and expedient manner possible.	TA, PW				X	
Health Care						
39. Continue to anticipate needs of aging baby boomers and seniors and support programs that enhance public health.	TA				X	
Educational Facilities						
40. Continue monitoring public school enrollment figures to best evaluate how to accommodate future growth and satisfy educational and facility needs.	TA				X	

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Medium Term
TE	Township Engineer	L	Long Term
TA	Township Administration (may include staff, manager, or zoning officer, etc.)	O	Ongoing
PW	Public Works		
PD	Police Department		
CH	Consulting Hydrogeologist		
CP	Consulting Planners		

PLANNING AND ZONING IN SURROUNDING MUNICIPALITIES (PAGES 175 – 183)

Principle: Promote Smart Growth and Sustainability (Regionally)

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
1. Consider opportunities to coordinate with neighboring municipalities in planning for future land use, park and recreation facilities, and transportation improvements.	BOS, PC				X	
2. Continue monitoring changes to land use planning and zoning in adjacent communities to access the need to address future conflicts.	BOS, PC				X	

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Mid Term
		L	Long Term
		O	Ongoing

FUTURE LAND USE PLAN (PAGES 185 – 196)

Principle: Promote Smart Growth and Sustainability

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Development Area						
1. Concentrate residential and nonresidential development with the Development Area so that future growth will be coordinated with the provision of public services.	BOS, PC				X	
2. Ensure that future development is considerate of inherent natural, historic, and scenic resources through the implementation of sensitive site design and development practices.	BOS, PC				X	
3. Continue satisfying the township's legal obligations to meet its fair share housing obligations by satisfying projected housing demands through 2021.	BOS, PC				X	
Residential Areas						
5. Plan for and provide pedestrian sidewalks and trails during the early design stages of subdivision and land development process to provide appropriate connections to other residential areas and community resources such as schools, parks, and commercial areas.	BOS, PC				X	
6. Strategically locate open spaces associated with residential subdivisions to create contiguous (versus fragmented) areas of protected lands for the protection of natural resources and wildlife habitat.	BOS, PC				X	
7. Amend the Site Analysis and Resource Conservation Plan requirements in the subdivision and land development ordinance to ensure that the optimal placement of trails, sidewalks, and open spaces are considered during the site design process.	BOS, PC	X				
Route 611 Corridor						
8. Concentrate future development and redevelopment within planned commercial nodes (versus continuous strip commercial pattern) along the corridor within existing commercial districts.	BOS, PC				X	
9. Ensure that building facades create architectural uniformity, buildings are oriented closer to the roadway, parking is located in the side and rear of buildings, and drive-thru facilities are restricted to the rear of buildings to improve visual character and aesthetics of corridor.	BOS, PC				X	
10. Incorporate appropriate access measurement measures, pedestrian connections (onsite and offsite), and public spaces (when possible) into the site design and layout of proposed developments to improve access, mobility, and functionality of the corridor.	BOS, PC				X	

FUTURE PLAN USE PLAN (CONTINUED) (PAGES 185 – 196)

Principle: Promote Smart Growth and Sustainability

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Development Area (continued)						
Route 611 Corridor (continued)						
11. Evaluate potential ordinance amendments and/or design guidelines to provide improved visual character and aesthetics to the 611 corridor.	BOS, PC, CP		X			
Town Center						
Promote future development that is not only compatible with the existing village character but enhances Plumsteadville's potential as a central place or Town Center of the township.	BOS, PC				X	
Conduct a village study as part of promoting Plumsteadville as a Town Center.	BOS, PC, CP		X			
Evaluate the feasibility of using of an Official Map for the provision of a connector (reverse frontage) road connecting Stump Road and Route 611.	BOS, PC, TE		X			
Cross Keys Area						
12. Develop the vision for the Cross Keys area and establish strategies through the establishment of design criteria and/or zoning amendments for its successful implementation.	BOS, PC, CP	X				
13. Engage with the other three municipalities in the Cross Keys area regarding multi-municipal planning strategies such as the expansion of the Keystone Innovation Zone (KIZ) or compatible zoning and improving traffic movements and circulation.	BOS, PC, CP	X				
14. Coordinate with the Pennsylvania Department of Community and Economic Development (DCED) and Pennsylvania Biotechnology Center of Bucks County to determine the feasibility expanding the KIZ into the Cross Keys area.	BOS, PC, CP	X				
Industrial Areas						
15. Maintain high standards of site design and layout exhibited throughout the township's industrial areas with future development plans.	BOS, CP				X	
16. Provide generous landscape buffers and/or berms adjacent to Residential Areas to minimize land use conflicts.	BOS, CP				X	

FUTURE PLAN USE PLAN (CONTINUED) (PAGES 185 – 196)

Principle: Promote Smart Growth and Sustainability

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Villages						
17. Promote future development in and around Villages that is compatible with the existing village character by reflecting local historic architecture, incorporating a street network reminiscent of historic settlements (e.g., grid network and alleys), and providing strategically located open spaces or village greens.	BOS, PC				X	
18. Conduct a village study for Gardenville and Point Pleasant.	BOS, PC, CP			X		
19. Examine the VR, Village Residential and VC, Village Center district regulations within all villages to evaluate the appropriateness of mixed uses (residential and nonresidential) in one building, provision of open space or village greens, and creation of a village viewshed overlay district.	BOS, PC		X			
Rural Area						
20. Maintain and enhance the rural character, provide low-density residential development and protect the agricultural land uses and inherent natural resources.	BOS, PC				X	
Resource Protection Areas						
21. Preserve the inherent natural features and scenic beauty of the area and provide land uses and activities that complement these sensitive resources unique to the township.	BOS, PC				X	
22. Provide heightened resource protection standards to promote and enhance their protection.	BOS, PC	X				
Delaware River Management Area Overlay District						
23. Preserve and enhance the protection of sensitive natural resources located along the Delaware River and its tributaries.	BOS, PC				X	
24. Re-examine the purpose and intent of the Delaware River Management Area Overlay District when applied in tandem with the RO, Rural Residential and RP, Resource Protection districts to determine appropriate standards that afford maximum protection.	BOS, PC	X				
Scenic Roads						
25. Encourage future development to preserve the views of the landscape and from designated scenic roadways.	BOS, PC				X	

FUTURE PLAN USE PLAN (CONTINUED) (PAGES 185 – 196)

Principle: Promote Smart Growth and Sustainability

Recommended Actions	Entity Responsible	Timeframe				Record of Action
		S	M	L	O	
Scenic Roads (continued)						
26. Evaluate necessary amendments to protect the scenic values of designated Scenic Roads.	BOS, PC			X		

Key			
BOS	Board of Supervisors	S	Short Term
PC	Planning Commission	M	Mid Term
TE	Township Engineer	L	Long Term
PW	Public Works	O	Ongoing
CP	Consulting Planners		

Appendix A

BRAINSTORM SESSION

At the initiation of the planning process for this comprehensive plan update, a public meeting was conducted and various questions were posed to the group in terms of the problems, issues, and desired future for Plumstead Township. The following is a summary of this brainstorm session.

A. Since previous comprehensive plan adoption in 1992, what are the biggest problems and issues facing the township?

- Traffic congestion along major arterials
- Road network is overburdened—heavy traffic volumes spilling over into rural roadways (cut-through traffic)
- Need for more appropriate signalization and signage along area roadways
- Route 611 and 313 intersection (regional implications)
- Carriage Hill traffic flowing onto Route 313
- Potential future impacts of increased growth and traffic volumes in and around Plumsteadville (don't want the village to turn into another Chalfont)(Need for bypass?)
- Plumstead lacks multimodal forms of transportation—required to drive everywhere
- Need to focus on trails and bike paths (horse trails)
- Plumstead lacks a “sense of community”
- Too many residential developments that are disconnected from the each other and from the community as a whole
- Too many single-family homes which places a burden on taxes and schools
- Are there too many large homes (McMansions) in the township? With a spike in aging baby boomers, many are downsizing the size of their homes...will there be a demand for all these homes in the future?
- Need to encourage a diverse tax base—need to expand/promote nonresidential uses/zoning districts?
- The future use of the township's preserved farms when ownership changes

B. Since previous comprehensive plan adoption in 1992, what are some positive trends and opportunities for the township?

- Promote mixed use developments—apartments above retail/office uses
- Promote context sensitive design—depending upon where in the township a development is proposed, encourage appropriate site layout, density/intensity, and architecture
- Establish Plumsteadville as a town center (focal point) of the community—enhance walkability and unified streetscape
- Optimize the use of fees in lieu of for the provision of sidewalks to provide connectivity (if not appropriate now due to rural context, money can be used later as area develops)
- Provide trails and sidewalks as a means to unify residential areas as well as other points of interest throughout township (Implement Township’s *Greenway and Trail Linkage Feasibility Study* (2001)—Establish a committee to herald efforts)
- Consider the feasibility of horse parks and trails
- Promote expansion/enhancement of individual villages (if appropriate). Enhance gateway/entrances into villages
- Industrial zoned area north of Plumsteadville has been a success (positive development image)
- Explore opportunities for the Cross Keys area (Is there a need to limit the number of car dealerships or promote consolidation of dealerships? What are other appropriate uses?)
- Keenan Development was an good example of site design planning process — convinced the developer to locate primary building close to road and parking to the rear of buildings (eliminates placing a “sea of parking” in front yard)
- Plumstead’s open space and farmland preservation program is a success story
- Promote the prosperity of farm and farm-related activities in the community. Market the township as the place to start up niche, boutique, organic farming operations.

Appendix B

RESIDENT SURVEY RESULTS

In October of 2010, the Plumstead Township officials sent out a survey to each household in the township. Nearly 5,000 surveys were sent out and nearly 500 were returned for a response rate of almost 10 percent. The following is a summary of the survey results.

1. Where do you reside in the Township?

West of Route 611	137	29%
Between Routes 611/413	195	41%
East of Route 413	143	30%

Number of Responses

475

2. How many years have you lived in Plumstead Township?

Less than one year	11	2%
1 - 5 years	44	9%
6 - 10 years	76	16%
11 - 15 years	105	22%
More than 15 years	243	51%

Number of Responses

479

3. What are the 3 main reasons you chose to live in Plumstead Township?

Born & Raised	44	4%
Convenient to Work	30	11%
Good Place to Raise Children	42	15%
Reasonably Priced Homes	136	11%
Reasonable Taxes	85	7%
General Quality of Life	246	20%
Quality of School	224	18%
Near Friends	91	7%
Most of the Above	58	5%

Number of Responses

1237

4. Where are you and other household members employed?

At Home	82	12%
Retired	115	17%
Within Plumstead Twp	38	6%
Philadelphia	24	2%
Montgomery County	82	12%
Elsewhere in Bucks	197	29%
Other	140	21%

Number of Responses**678****5. How many members of your household fit the following age categories?**

Pre-school	35	3%
Elementary School	105	11%
Middle/High School	118	11%
College	102	11%
22 to 54	305	38%
55 to 74	189	21%
75+	49	5%

Number of Responses**1400****6. How would you rate the following services in Plumstead Township?**

	Excellent		Good		Adequate		Poor		Responses
Parks and Recreation areas	87	19%	217	48%	97	22%	48	11%	449
Street Maintenance	71	15%	203	44%	141	30%	49	11%	464
Snow Removal	107	23%	224	49%	109	24%	21	5%	461
Fire Protection	192	42%	212	47%	46	10%	3	1%	453
Police Protection	199	43%	208	45%	46	10%	11	2%	464
Ambulance Service	173	40%	200	46%	57	13%	2	0%	432
Street Lights	57	13%	142	33%	167	38%	68	16%	434
Zoning-Inspection Services	44	11%	162	39%	154	37%	52	13%	412
Storm-Groundwater	40	9%	178	41%	142	33%	69	16%	429

7. How would you rate the following businesses in Plumstead Township and vicinity in terms of quality and access?

	Excellent		Good		Adequate		Poor		Responses
Grocery Stores	170	36%	205	43%	82	17%	20	4%	477
Pharmacies	165	35%	192	41%	93	20%	22	5%	472
Clothing Stores	38	9%	103	23%	137	31%	167	38%	445
Restaurants	87	19%	179	38%	154	33%	49	10%	469
Entertainment	38	9%	94	22%	161	37%	144	33%	437
Hardware Stores	148	31%	183	38%	124	26%	22	5%	477
Auto Services	111	25%	181	40%	131	29%	28	6%	451
Banking-Financial	146	31%	201	43%	105	23%	13	3%	465

8. In which locations do you purchase the majority of the following goods and services?

	Plumstead Twp.		Doylestown Boro/Twp		Warrington Twp		Other		Responses
Groceries	291	55%	161	31%	53	10%	22	4%	527
Prescriptions	244	51%	137	29%	11	2%	87	18%	479
Clothing Stores	13	3%	189	37%	122	24%	190	37%	514
Sporting Goods	27	6%	70	17%	147	35%	180	42%	424
Movies/Entertainment	18	4%	210	46%	169	37%	63	14%	460
Healthcare	97	20%	267	55%	26	5%	98	20%	488
Furniture	13	3%	31	8%	48	12%	307	77%	399
Appliances	7	2%	82	19%	121	29%	212	50%	422
Automobiles	80	18%	225	50%	15	3%	131	29%	451
Gasoline	324	66%	82	17%	15	3%	72	15%	493
Automobile Repair	135	28%	233	49%	17	4%	94	20%	479
Banking-Financial	197	41%	212	44%	11	2%	66	14%	486
Hardware-Home Improvement	270	52%	32	6%	152	29%	62	12%	516

9. What priority should each of the following have when planning for the future of Plumstead Township?

	High Priority		Medium Priority		Low Priority		None		Responses
Natural Resource Protection	329	70%	110	23%	28	6%	5	1%	472
Open Space-Agricultural	307	65%	111	23%	38	8%	18	4%	474
Growth Management	350	74%	92	20%	21	4%	7	1%	470
Historic Resources	187	41%	187	41%	76	16%	11	2%	461
Affordable Housing	99	21%	159	34%	159	34%	44	10%	461
Senior Housing	65	14%	163	35%	192	41%	43	9%	463
Community Rec. Facilities	103	22%	185	40%	152	33%	26	6%	466
Daycare Facilities	26	6%	138	30%	228	50%	68	15%	460
Activities for Seniors	55	12%	175	38%	189	41%	42	9%	461
Activities for Youth	151	33%	179	39%	109	24%	19	4%	458
Public Schools	216	46%	136	29%	85	18%	29	6%	466
Art and Culture	78	17%	202	44%	152	33%	31	7%	463
Employment Opportunities	163	35%	190	41%	92	20%	15	3%	460
Traffic and Road Conditions	323	69%	132	28%	12	3%	4	1%	471
Public Transportation	73	16%	138	30%	195	43%	52	11%	458
Adequate Sewage Disposal	258	56%	146	32%	44	10%	13	3%	461
Ground Water Protection	358	76%	91	19%	16	3%	3	1%	468
Other	48		3		0		1		52

10. Do you think the Township should encourage more diverse housing in order to serve families with varying income needs such as:

	Yes		No		No Opinion		Responses
Apartments	73	15%	353	75%	46	10%	472
Condominiums	92	19%	332	70%	48	10%	472
Townhouses	142	30%	279	59%	50	11%	471
Manufactured Homes	70	15%	340	72%	62	13%	472

11. Should the Comprehensive Plan include recommendations to encourage additional housing opportunities for senior citizens such as:

	Yes		No		No Opinion		Responses
Age-Restricted	169	36%	207	44%	94	20%	470
Assisted Living	196	42%	178	38%	98	21%	472
Nursing Homes	148	32%	207	44%	112	24%	467
Independent Housing	184	39%	176	38%	108	23%	468

12. Do you feel that Plumstead Township is growing?

Too fast	213	46%
Too slow	22	5%
About the right pace	232	50%

Number of Responses 467

13. In your opinion, what top 3 qualities make a "good neighborhood?"

Recreational Facilities	115	8%
Quality Schools	322	23%
Biking and Walkability	185	13%
Convenient Shopping	206	15%
Arts and Culture	53	4%
Safe Streets	333	24%
Pedestrian Safety	93	7%
Other	87	6%

Number of Responses 1394

14. Should Plumstead Township acquire or preserve land for the following?

Key Open Space	265	28%
Wildlife Corridors	211	22%
Trail Linkages	201	43%
Farms	271	29%

Number of Responses 948

15. How much of an increase in taxes would you be willing to pay annually for land preservation?

\$0	122	26%
Up to \$5	47	10%
Up to \$15	62	13%
Up to \$20	39	8%
Up to \$25	196	42%

Number of Responses**466****16. How much are you willing to pay in additional taxes annually to support new Twp recreational and/or cultural programs and activities?**

\$0	189	40%
Up to \$5	47	10%
Up to \$15	62	13%
Up to \$20	27	6%
Up to \$25	103	22%

Number of Responses**473****17. Identify the recreational facilities and activities that you would like to see improved or added to the Township's park system:**

Soccer/Football Fields	77	5%
Baseball/Softball Fields	80	5%
Playgrounds/Tot Lots	70	5%
Tennis Courts	70	5%
Field Hockey/Lacrosse	34	2%
Horseback Riding	58	4%
Bicycling	184	12%
Walking Trails	266	18%
Concerts	110	7%
Arts	58	4%
Camping	32	2%
Picnicking	82	6%
Amphitheatre	55	4%
Community Clubs	63	4%
Senior Citizen Program	89	6%
Community Center	92	6%
Other	70	5%

Number of Responses**1490**

18. How often do you and or your family visit the following recreation areas?

	Several Times per Week		A Few Times per Month		Rarely		Never		Responses
Landis Park	16	4%	36	8%	105	24%	279	64%	436
Owls Nest Park	2	0%	12	3%	108	25%	317	72%	439
Allohaken Park	2	0%	9	2%	53	12%	363	85%	427
Jennifer Schweitzer Park	10	2%	30	7%	100	23%	287	67%	427
Ralph Stover State Park	12	3%	106	24%	203	45%	128	29%	449
Tohickon Valley Park	13	3%	58	13%	161	37%	208	47%	440
Central Park-Doylestown	9	2%	73	17%	203	46%	152	35%	437
Peace Valley Park	45	10%	166	35%	189	40%	68	15%	468
Nockamixon State Park	12	3%	89	20%	242	54%	108	24%	451
Other	14		22		4		15		55

19. Do you believe the quality of life in Plumstead Township is:

Improving	73	12%
Declining	109	18%
Remaining the same	274	44%

Number of Responses

456

Appendix C

LAND USE DEFINITIONS

Single-Family Residential—Consists of properties with single-family detached, or attached, one- or two-unit dwellings on lots less than 5 acres. This category also includes mobile home parks.

Multifamily Residential—Includes properties with 3 or more attached dwelling units. This category includes independent living units.

Rural Residential—The same as “Single-Family Residential” except dwellings are on lots that are 5 acres or more (but do not qualify as “Agricultural”).

Agricultural—Based upon an analysis of 2005 orthographic aerial photos, consists of land that is 20 acres or greater where at least one-third of the parcel exhibits agricultural or farm-related characteristics such as stables, orchards, and active or fallow fields. This category may also include residential dwelling units and farm related structures on the same lot.

Mining and Manufacturing—Consists of heavy manufacturing industries, and painting and advertising industries, as well as building and landscaping material extraction.

Government and Institutional—Includes all Federal, State, County, and Municipal buildings and facilities, except those that are park and recreation related. All private, parochial and public schools are included as well as, churches, cemeteries, emergency service facilities, and fraternal organizations. This category includes medium- to long-term housing accommodations, such as retirement complexes, assisted living facilities, continuing care retirement communities, and nursing homes.

Commercial—Includes (but is not limited to), wholesale and retail trade establishments finance and insurance real estate, and hotels.

Parks, Recreation, and Protected Open Space—Consists of municipal, County, and State parks, State Game Lands, County preserved land and flood control sites, golf courses, scout camps, and campgrounds. Includes land preserved by conservation organizations and deed-restricted land or common open space areas associated with residential developments.

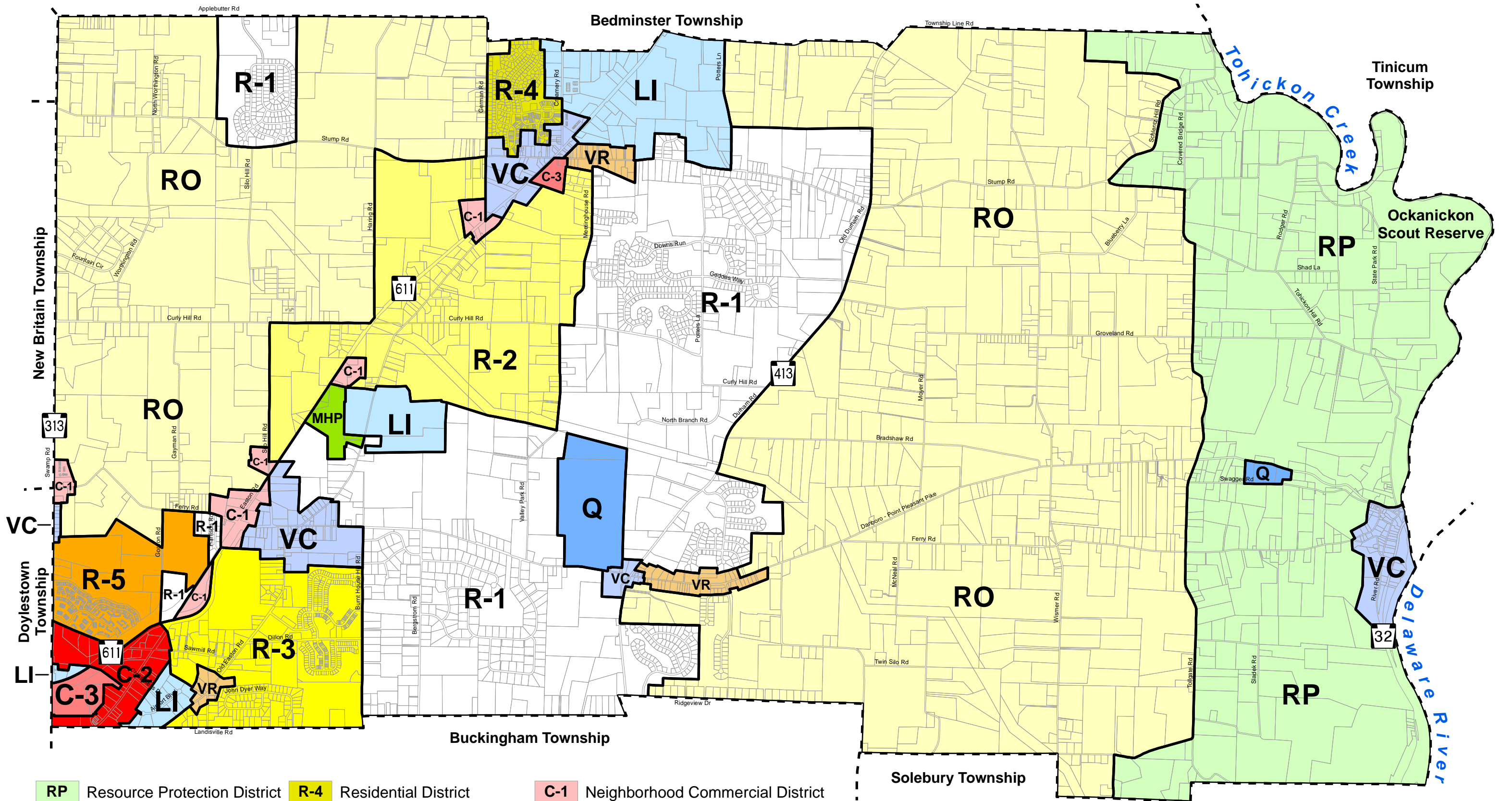
Transportation and Utilities—Consists primarily of utility installations and right-of-ways, terminal facilities, automobile parking, and stormwater management basins. Calculations for roadway acreage are also included.

Vacant—Includes parcels without dwelling units or buildings containing nonresidential uses but may include structures such as barns, stables, sheds, etc.

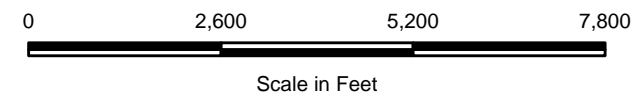
Appendix D

ZONING MAP

(See following page.)



- | | | |
|--|--|---|
| RP Resource Protection District | R-4 Residential District | C-1 Neighborhood Commercial District |
| RO Rural Residential District | R-5 Rural Residential District | C-2 Highway Commercial District |
| R-1 Rural Residential District | MHP Mobile Home Park District | C-3 Planned Commercial District |
| R-2 Rural Residential District | VR Village Residential District | LI Light Industrial District |
| R-3 Rural Residential District | VC Village Commercial District | Q Quarry |



Prepared by
Bucks County Planning Commission
Geographic Information Systems Section
2010



ZONING MAP

PLUMSTEAD TOWNSHIP COMPREHENSIVE PLAN

Appendix E

FUNDING AND TECHNICAL ASSISTANCE SUMMARY

Name of Program	General Description of Program	Administering Agency/Entity
Accessible Housing Program, PA	Provides grants to local entities to carry out home modification programs for lower-income people with disabilities.	PA DCED
Alternative Fuels Incentive Grants (AFIG)	Encouraging the transfer and commercialization of innovative energy technologies and the use of indigenous fuels.	PA DEP
Assessment and Watershed Protection Program Grants (AWPPGs)	Supports a watershed approach to better address water quality problems in the US and building the capacity of all levels of government to develop and implement effective, comprehensive programs for watershed protection, restoration, and management to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.	EPA Watershed Program Non-point Source Program
Business in our Sites Program	Provides grants and loans for business site preparation.	PA DCED
Bucks County Open Space Program	Provides funding up to 75 percent for open space land acquisition and/or municipal open space improvements.	BCPC
Communities of Opportunity	Provides grants to municipalities, redevelopment authorities and housing authorities for community revitalization, economic development, and lower-income housing development and rehabilitation.	PA DCED
Community Conservation Partnership Grant Program	Funds a wide variety of recreation, greenway, rivers conservation and open space preservation activities with 50% matching grants. Four main categories of grants are: <ul style="list-style-type: none"> a. Planning and Technical Assistance b. Acquisition Projects c. Development Projects d. Federally Funded Projects This is a restructuring and combination of separate grant programs including the former Keystone, Rails-to-Trails, River Conservation and other programs.	PA DCNR
Community Development Bank, PA.	Provides capital and capacity building grants to "Community Development Financial Institutions" (CDFIs). The CDFIs are then allowed to assist with small scale business expansions, new business starts, non-profit facilities and very small businesses.	PA DCED

Name of Program	General Description of Program	Administering Agency/Entity
Community Development Block Grant (CDBG)	Offers grants for a wide variety of activities, provided the applicant proves by survey or census that the project will benefit 51% low and moderate income persons or handicapped persons or eliminate "blighted" conditions in officially designated areas. For example, funds can be used for water and sewage improvements, storm drainage, handicapped accessibility, housing rehabilitation, parks and recreation, street and sidewalk improvements, code enforcement, community planning, and historic rehabilitation.	Bucks County Office of Community and Economic Development
Community Revitalization Program	Very broad grant program. Officially intended to promote community stability, increase tax bases and improve quality of life. Applications may be made by municipalities, authorities, economic development organizations and non-profit corporations. Public/non-profit/profit partnerships are encouraged. Generally can be used for infrastructure, community revitalization, building rehabilitation, demolition of blighted structures, public safety, and crime prevention.	PA DCED & Governor's Office
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	This program funds transportation projects that reduce congestion and improve air quality. Eligible projects include transit improvements, shared-ride services, traffic flow improvements, demand management strategies, pedestrian and bicycle facilities and programs, inspection and maintenance programs, and alternative fuel projects.	Federal Highway Administration (Philadelphia Office)
Conservation Corps, PA.	Provides funding for work crews for community projects, such as trail improvements.	PA DCNR
Core Communities Housing Program	Core Communities Housing Program – Provides grants for affordable housing activities, including construction and rehabilitation, on previously developed sites.	PA DCED
Customized Job Training	Provides grants to businesses (other than retail) to train new employees, and retrain and upgrade existing employees. Up to 100% of eligible costs may be paid for new job creations, and up to 70% for other eligible training.	PA DCED Businesses apply through a State-licensed Education Agency
DEP & Environmental Systems Research Institute Inc.	GIS Software Grants	PA DEP
Downtown Pennsylvania Program	Offers full-time management to organize and implement a Business District Authority, that provides financing for additional services in a commercial area. The Commercial Revitalization program funds physical improvement projects that are consistent with an action plan. Projects may include site improvements, façade renovations and adaptive reuse of downtown buildings.	PA DCED

Name of Program	General Description of Program	Administering Agency/Entity
Early Intervention Program	Provides matching grants to assist municipalities experiencing fiscal difficulties to develop comprehensive multi-year financial plans.	PA DCED
Economic Development Administration Economic Adjustment Grants	Provides grants to design and implement strategies to adjust to serious job losses to a local economy, such as natural disasters and defense spending reductions.	U.S. EDA Philadelphia Office
Economic Development Administration Loan Guarantees	Guarantees business loans made through private lenders. Available for up to 80% of project cost. Primarily intended for manufacturers, but commercial businesses may qualify. An equity contribution is required by business. Must show job creation.	U.S. EDA Philadelphia Office
Economic Development Administration Public Works Grants	Offers grants to distressed municipalities to assist in attracting new industries and encourage business expansion. Projects typically involve water and sewage improvements primarily serving industries, industrial access roads, and business incubators. A 50% local match is typically required.	U.S. EDA Philadelphia Office
Elm Street	Provides grants for planning, technical assistance and improvements to residential and mixed use areas near central business districts.	PA DCED
Emergency Responders Resources and Training Program	Provides funds for emergency responder improvement projects.	PA DCED
Emergency Services Loan Program	Provides low-interest loans to fire and ambulance companies to acquire vehicles, or to renovate or acquire buildings to house vehicles.	PEMA
Energy Harvest Grant	Energy projects that address air quality and watershed protection.	PA DEP
Enterprise Zone Program, PA	Encourages investment in "enterprise zones" that are distressed areas designated by the State. The main benefits include: low-interest loan pools (mainly for building acquisition, construction, renovation and machinery), local technical assistance in connecting with financing and technical resources, and preferences in certain State grant and loan programs. A priority is placed upon assistance to industrial businesses. Grants are also available for the initial planning of proposed enterprise zones, and for program administration. See also "E.Z. Tax Credits" below. (This program is completely separate from the Federal Empowerment Zone/Enterprise Community program.)	PA DCED
Enterprise Zone Tax Credits	Provides State tax credits to businesses located within State-designated Enterprise Zones for new building construction and rehabilitation of existing buildings.	PA DCED
Environmental Protection Agency Brownfields Program	Grants for a very limited number of pilot demonstration projects for cleanup of contaminated underused industrial sites.	U.S. EPA Philadelphia Office

Name of Program	General Description of Program	Administering Agency/Entity
EPA Section 319 Non-point Source Pollution Prevention Program	Provides money for projects that help control non-point source pollution and protect water quality.	Pennsylvania Association of Conservation Districts, Inc. (PACD)
Flood Control - Army Corps and NRCS Watershed Programs	Various types of projects to manage flooding. Typically, the Army Corps is involved in larger watersheds, while NRCS has primary responsibility for smaller watersheds.	U.S. Army Corps of Engineers, U.S. Natural Resources Conservation Service
Flood Hazard Mitigation Grant Program	Provides 75% funding to relieve imminent hazards from flooding, such as voluntary buy-outs and demolitions of highly flood-prone properties.	FEMA
Flood Protection Program, PA	Offers design and construction of flood protection projects. The project must be deemed economically justifiable under the state capital budget process.	PA DEP Bureau of Waterways Engineering
Growing Greener II	Main Street and downtown redevelopment grants to municipalities and nonprofits, focusing on improving downtown sites and buildings. Eligible projects may include approaches that assist in business development or public improvements.	PA DCED
Heritage Parks Program	Provides grants up to 75% of costs for projects within State-designated "Heritage Parks" to preserve and interpret the significant contribution that certain areas made upon the industrial heritage of the state and nation. Funds may be used for four types of projects: Feasibility studies, a Management Action Plan, Special purpose studies, and Implementation projects. Projects are intended to conserve natural, historic and recreational resources relating to industrial heritage to stimulate regional tourism.	PA DCNR
Historic Preservation - Certified Local Government Grants	Provides modest-sized matching grants to provide technical assistance to municipalities that have official historic districts and meet other criteria to be "certified."	PHMC
Historic Preservation Survey and Planning Grants	Matching grants for historic surveys, historic preservation planning and National Register nominations. Available to municipalities and non-profit organizations. Cannot be used for construction.	PHMC
Historic Preservation Tax Credits	Offers Federal income tax credits for a percentage of the qualified capital costs to rehabilitate certified historic buildings, provided the exterior is restored. The program is generally limited to income-producing properties.	National Park Service
Home Ownership Choice Program	Provides financing assistance for new, single-family homes in designated blighted areas.	PA HFA
Home Town Streets	Program designed to promote downtown reinvestment. Reimbursement of up to 80% of eligible expenses which may include streetscape improvements, lighting, street furniture, bus shelters, traffic calming, kiosks, signage and others.	PADOT

Name of Program	General Description of Program	Administering Agency/Entity
Housing and Redevelopment Assistance	Provides state-funded grants for community revitalization and economic development activities at the local level. Assists the community in becoming competitive for business retention, expansion, and attraction.	PA DCED
Industrial Sites Reuse Program	Provides grants and low-interest loans for environmental site assessment and remediation at former industrial sites.	PA DCED
Infrastructure Development Program, PA.	Provides grants and low interest loans for public and private infrastructure improvements needed for a business to locate or expand at a specific site. Financing is also available for infrastructure to redevelop industrial sites that have been idle more than 6 months, such as acquisition and demolition. Primarily available for industries, research facilities, company headquarters and business park developments.	PA DCED
Intermunicipal Projects Grants	Promotes cooperation between neighboring municipalities so as to foster increased efficiency and effectiveness in the delivery of municipal services at the local level.	PA DCED
Job Creation Tax Credits, PA	Provides State tax credits to businesses that commit to create new jobs in PA within the next 3 years. Must create 25 new jobs or 20% of the existing work force. The jobs must pay over a certain minimum income. The business must explain how it exhibits leadership in technological applications.	PA DCED
Keystone Historic Preservation Funds	Provides 50% matching grants to fund analysis, acquisition or rehabilitation of historic sites. The site must be on the National Register of Historic Places, or officially determined to be eligible for listing. The site must be accessible to the public after funding. The grants can be made to public agencies or non-profit organizations.	PHMC
Keystone Innovation Zones	Provides grant funds to community/university partnerships to generate job growth through tech transfer and entrepreneurship. These zones are designed to foster innovation and create entrepreneurial opportunities.	PA DCED
Keystone Opportunity Zones	Provides state and local tax abatement to businesses located in a designated zone.	PA DCED
Keystone Rec., Park & Cons. Fund – Library Program	Provides grants to improve the physical facilities of public libraries.	PA DCED
Keystone Rec., Park & Cons. Program - Land Trust Grants	Grants to well-established non-profit land trusts and conservancies to plan for and acquire critical natural areas. Land that is acquired must be open to the public.	PA DCNR

Name of Program	General Description of Program	Administering Agency/Entity
Kodak American Greenways Program	Through a partnership project of the Eastman Kodak Company, the Conservation Fund, and the National Geographic Society, the program provides small grants to stimulate the planning and design of greenways in communities throughout the country. In general, grants can be used to cover expenses needed to complete a greenway project including planning, technical assistance, legal, and other costs.	The Conservation Fund
Land Use Planning and Technical Assistance Program (LUPTAP)	Assists local governments and counties to prepare comprehensive plans, downtown plans, special community development studies and development regulations.	PA DCED
Local Government Capital Project Loan Program	Provides low-interest loans to local government for equipment and facilities needs.	PA DCED
Low Income Housing Tax Credit, Federal	Offers Federal income tax credits to non-profit and for-profit developers of housing for low-income persons. Non-profits can then sell their credits to investors.	PA HFA
Machinery and Equipment Loan Fund	Provides low-interest loans to acquire or upgrade machinery and equipment and related engineering and installation for industrial, agricultural, processing and mining businesses. The business must agree to create or preserve jobs as a condition of the financing.	PA DCED
Main Street Program	Provides grants to municipalities to coordinate downtown revitalization.	PA DCED
Minority Business Development Authority, PA	Provides low-interest loans for businesses owned and operated by minorities. Can generally be used for industrial, international trade, franchise, retail and commercial uses. Can be used for site acquisition, building construction and renovation, machinery and working capital.	PA Minority Business Development Authority & PA DCED
Municipal Open Space Program	Provides assistance with local land preservation efforts and open space planning. Aids in the acquisition of land for agricultural preservation, natural resource protection, and/or recreation.	BCPC
Municipalities Financial Recovery Act, PA	Provides technical advice and grants for special purposes (such as studies to improve service efficiency) within municipalities that have been officially designated as financially distressed. After application and designation, the municipality must follow a Financial Recovery Plan.	PA DCED
Neighborhood Assistance Tax Credit Program	Authorizes state corporate income tax credits to private companies for investment in distressed areas, support of neighborhood revitalization planning, and development activities in designated Enterprise Zones.	PA DCED
On-Lot Septic System Program	Offers low-interest loans to limited income households to repair failing on-lot septic systems.	PennVest and PA Housing Finance Agency

Name of Program	General Description of Program	Administering Agency/Entity
Opportunity Grant Program (replaced Sunny Day Fund)	Offers grants to create or preserve very substantial numbers of jobs. May be used for job training, infrastructure, land and building improvements, machinery and equipment, working capital, or environmental assessment and cleanup.	Can only be applied for through the Governors Action Team
PECO Green Region Open Space Program	Program designed to assist local communities within PECO's service territory in efforts to protect or improve public spaces. Grants of up to \$10,000 may be provided to pay for up to 50% of eligible activities which may include open space planning, acquisition of and improvements to municipally-owned open space, and acquisition of conservation easements.	Natural Lands Trust, Inc.
PEDFA Financing	Provides low-interest rate financing of business growth. Projects that can be funded with bonds that are exempt from Federal income tax have a lower interest rate than other types of projects. The lower rate financing is limited to activities such as site acquisition, building construction and rehabilitation and new equipment - for manufacturing and certain transportation and utility uses. The higher rate is available to a broader range of businesses and a much wider variety of expenditures.	PA Economic Financing Authority-- Applications are made through a local Industrial Development Corp. or Authority
PA Industrial Development Authority Financing (PIDA)	Provides low interest loans for construction, renovation and site preparation of buildings for new employers. Primarily funds industrial projects.	PIDA and PA DCED
PennCAP	Provides a guarantee of loans to businesses made by participating banks.	DCED Apply through a participating bank
PENNVEST	Offers low interest loans for construction and improvement of drinking water and wastewater systems. Outright grants may be available for highly distressed communities. Mainly intended for public systems, but some private systems may be approved. Water projects are funded through the Drinking Water Revolving Loan Fund. Sewage projects are funded through the Clean Water Revolving Fund. In addition, PennVest is authorized to provide loans for projects to control existing stormwater problems, such as separating stormwater from sanitary sewage. The "Advance Funding Program" provides low-interest loans for feasibility studies and engineering of systems if the utility cannot fund such work itself.	PA Infrastructure Investment Authority and PA DEP Bureau of Water Supply Management-- Involves both U.S. EPA and State funds
Recreational Trails Program	Projects such as maintenance and restoration of existing trails, development and rehabilitation of trailside and trailhead facilities and trail linkages, purchase and lease of recreational trail construction and maintenance equipment, construction of new recreational trails, and acquisition of easements or property for recreational trails or recreational trail corridors.	DCNR

Name of Program	General Description of Program	Administering Agency/Entity
Recycling Grants	Grants for up to 90% of municipal costs to develop and implement recycling programs, such as the purchase of recycling bins and composting equipment. Grants are also available to counties for a recycling coordinator, waste management plans and pollution prevention education.	PA DEP Bureau of Land Recycling and Waste Management (under Act 101 of 1988)
Safe Routes to School Program	Program intended to enhance the quality of community life by promoting safe walking and biking to school. Reimbursement of up to 80% of eligible expenses which may include sidewalks, crosswalks, bike trails, calming improvements, and pedestrian education.	PADOT
SBA Financing	Offers low-interest financing for smaller businesses, including: - micro-loans and micro-enterprise grants - Section 7(a) Guaranteed Business Loans - Section 504 Loans to allow certified development organizations to make long-term loans for real estate and other fixed assets	U.S. Small Business Administration
Sewage Facility Planning Grants	Grants to pay up to 50% of the costs to prepare new sewage facilities plan or update an existing plan, under State Act 537 of 1966.	PA DEP
Shared Municipal Services	Provides modest-sized 50/50 matching grants to promote cooperation among municipalities, in order to increase the efficiency of public services. Two or more municipalities may apply, or a council of governments.	PA DCED
Small Business First	Provides low-interest loans for projects by businesses that generally have less than 100 employees. Generally, funding can be used for site acquisition, building construction, machinery, working capital, environmental compliance, defense-cutback impacts, recycling, technology, export and computer activities. This is also one of the few funding sources that can be used for restaurants, hotels and motels. The recipient must agree to create or preserve jobs.	PA DCED An application can be made through an "Area Loan Organization"
Small Business Incubator Program	Provides loans and grants for facilities in which a number of new businesses operate under one roof with affordable rents, sharing services and equipment and having equal access to a wide range of professional, technical, and financial programs.	PA DCED
Small Communities Planning Assistance Program (SCPAP)	Provides grants up to 100% of the costs to eligible municipalities to prepare comprehensive plans, development regulations and special strategies for development. Generally, 51% of the municipality's residents must be low or moderate income, according to the census or a survey.	Federal CDBG administered by PA DCED
Small Water System Regionalization Grants	Provides grants for feasibility studies concerning the merger of small drinking water systems.	PA DEP Bureau of Water Supply
Smart Growth Leadership Institute	Smart Growth Technical Assistance.	Leadership Institute

Name of Program	General Description of Program	Administering Agency/Entity
Solid Waste Facility Programs	Programs provide grants for municipalities to review proposed solid waste facilities within their borders. Programs also provide funding for municipal inspectors of facilities and for host fees from operators.	PA DEP Bureau Land Recycling and Waste Management
Source Water Protection Technical Assistance Program (SWPTAP)	Grant that provides technical expertise and assistance to interested community water systems for the development of local source water protection programs. Such source water protection programs can involve wellhead protection for groundwater sources, watershed protection for surface water sources or both for systems using both groundwater and surface water.	PA DEP Bureau of Watershed Management
Stormwater Management Grants (Under State Act 167 of 1978)	Grants for cooperative efforts at the watershed level among municipalities for stormwater planning and ordinances. Grants are typically made to counties, but may be made to municipalities.	PA DEP Bureau of Watershed Conservation
Stream Improvement Program	Provides design and construction assistance to eliminate imminent threats to flooding and stream-bank erosion.	PA DEP Bureau of Waterways Engineering
TEA 21 Trans-portionation Enhancements Program (Part of Federal Transportation Efficiency Act)	Provides grants for: facilities for pedestrians and bicycles, acquisition of scenic easements and scenic or historic sites, development of scenic or historic route programs, landscaping and other scenic beautification along highways, historic preservation, restoration of historic transportation facilities (such as canals), preservation of rail corridors (particularly for bicycle/walking routes), control and removal of outdoor advertising, archeological research, and mitigation of water pollution due to highway runoff. All projects must have a direct relationship to transportation.	U.S. DOT funds administered by PADOT
Tire Pile Cleanup Grant	Grants to municipalities to provide reimbursement for costs of cleaning up large piles of used tires.	PA DEP Bureau of Land Recycling & Waste Management
TreeVitalize Program	Incentive grants are being offered to encourage municipalities to cross boundaries and work together to include tree cover in their planning and budgeting. Applications are welcomed from local governments or business improvement districts in certain counties, which includes Bucks. Priority consideration will be given to applications supporting multi-municipal forestry management projects.	PA DCNR TreeVitalize
Urban Forestry Grants	Provides grants for tree planting projects. Is also a Federal "America the Beautiful" grant program for tree planting.	PA DCNR
Watershed Resources Educational Network (WREN)	Funds community based educational projects that protect and improve either the drinking water source waters for the community's public drinking water system or the community's watershed.	PA DEP

Name of Program	General Description of Program	Administering Agency/Entity
Wildlife Habitat Incentives Program (WHIP)	Provides both technical assistance and cost-share assistance to establish and improve fish and wildlife habitat. Projects may include riparian buffer restoration, stream fencing in agricultural areas, wetland enhancement, and fish habitat restoration.	USDA

Source: Publications and internet sites of various agencies

Key	
BCPC	Bucks County Planning Commission
CDBG	Community Development Block Grant
FEMA	Federal Emergency Management Agency
PA DCED	Pennsylvania Department of Community and Economic Development
PA DCNR	Pennsylvania Department of Conservation and Natural Resources
PA DEP	Pennsylvania Department of Environmental Protection
PA HFA	Pennsylvania Housing Finance Agency
PEMA	Pennsylvania Emergency Management Agency
PADOT	Pennsylvania Department of Transportation
PHMC	Pennsylvania Historical and Museum Commission
PIDA	Pennsylvania Industrial Development Authority
USDA	U.S. Department of Agriculture
US DOT	U.S. Department of Transportation
US EDA	U.S. Economic Development Administration
US EPA	U.S. Environmental Protection Agency

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NOTICE: Subsequent to the adoption of the plan it was discovered that the **Future Land Use Map** located between pages 188 and 189 and the **Zoning Map** located between pages 238 and 239 do not accurately depict the zoning for the property identified as TMP # 34-11-01. The property is currently zoned R3, not VC.

12/07/2011