



TOWNSHIP OF BRISTOL

Comprehensive Plan

June 2008

RESOLUTION NO. 09-2008

**A RESOLUTION OF THE TOWNSHIP OF BRISTOL, COUNTY OF BUCKS,
PENNSYLVANIA APPROVING THE BRISTOL TOWNSHIP COMPREHENSIVE
PLAN DATED JUNE , 2008**

WHEREAS, Bristol Township retained the services of the Bucks County Planning Commission to assist with preparing and drafting an update to the 1986 Bristol Township Comprehensive Plan; and

WHEREAS, the Bristol Township Comprehensive Plan guides growth and development through sound planning principles. The planning principles of the Comprehensive Plan include smart growth and sustainability concepts; and

WHEREAS, the Land Use Planning Approach is intended to guide development and conserve natural systems, utilizing existing infrastructure, revitalizing growth centers, and encouraging alternative means of transit such as walking and biking; and

WHEREAS, the Comprehensive Plan used these principles in formulating goals, objectives, and actions intending to create and maintain the physical, economic and social environment of the Township; and

WHEREAS, the Comprehensive Plan seeks to insure that the Township not only becomes, but remains, a desirable community in which to live and work; and

WHEREAS, on May 21, 2008, the members of the Bristol Township Planning Commission held a meeting to review and consider the Comprehensive Plan, and recommended its adoption by the Township of Bristol; and

WHEREAS, in accordance with Section 301.3 of the Pennsylvania Municipalities Planning Code, the Comprehensive Plan was forwarded to the Bucks County Planning Commission for review and comment. The Bucks County Planning Commission, in a June 4, 2008, review letter, recommended that the Township adopt the Comprehensive Plan Update as submitted since it is consistent with the requirements of Section 301 of the Pennsylvania Municipalities Planning Code; and

WHEREAS, the mandatory forty-five (45) day review and comment period has elapsed during which time adjoining municipalities, the Bristol Township School District, and the general public have had the opportunity to express their views on the said Comprehensive Plan Update; and

WHEREAS, the Council for the Township of Bristol and the Bristol Township Administration has reviewed the Comprehensive Plan Update and has found that it constitutes

a suitable, rational and timely plan for guiding development and growth in Bristol Township; and

WHEREAS, the Bristol Township Comprehensive Plan Update has been the subject of one or more duly advertised public hearings by the Council of Bristol Township as required by and in accordance with the Pennsylvania Municipalities Planning Code.

NOW, THEREFORE, be it resolved by the Council of the Township of Bristol, Bucks County, Pennsylvania, that:

SECTION 1. The Bristol Township Comprehensive Plan, dated June, 2008, prepared by the Bucks County Planning Commission, together with all maps, charts, textual matter and other matters intended to form the whole thereof, be and is hereby adopted. A listing of the various maps, charts, textual matter, and other matters forming the whole of the said Bristol Township Comprehensive Plan, as set forth in the Table of Contents of said Plan, is attached hereto as Exhibit "A" and expressly made part of this Resolution.

SECTION 2. Council for the Township of Bristol hereby agrees, by the said adoption of the Bristol Township Comprehensive Plan dated June, 2008, to be guided by said Comprehensive Plan on all matters relating to land use planning.

SECTION 3. The appropriate Township officials are hereby authorized and directed to take, or cause to be taken, all such other actions as may be necessary or permitted under the Pennsylvania Municipalities Planning Code, 53 P.S. Section 10101 *et seq.*, or otherwise desirable to effect and otherwise perfect the said adoption of the Bristol Township Comprehensive Plan dated June, 2008, including, but not limited to:

a. Recording, or causing the recording of, a notation directly on said Bristol Township Comprehensive Plan that the same was adopted by this Resolution on the date hereof by affirmative vote of not less than a majority of the members of the Bristol Township Council; and

b. Forwarding a certified copy of said Bristol Township Comprehensive Plan to the Bucks County Planning Commission with thirty (30) days after the adoption of this Resolution.

SECTION 4. The provisions of this Resolution and the Bristol Township Comprehensive Plan dated June, 2008, adopted hereby are severable. If any provision of this Resolution or said Bristol Township Comprehensive Plan or the application thereof to any person or circumstance, is held invalid or unenforceable, the remainder of this Resolution or said Bristol Township Comprehensive Plan, and the application of such provision to other persons or circumstances, shall not be affected thereby. It is the intent of the Council of the Township of Bristol that this Resolution and said Bristol Township Comprehensive Plan would have been adopted had such invalid or unenforceable provision or application had not been included or provided herein.

SECTION 5. This Resolution shall be effective immediately upon adoption of this Resolution.

ADOPTED this day of June, 2008 .

ATTEST:

COUNCIL OF THE TOWNSHIP OF BRISTOL,
BUCKS COUNTY, PENNSYLVANIA


Denise Gorry, Council Secretary

By: 
Linda Tarlini, Council Vice President

Bristol Township
Comprehensive Plan
2008

ADOPTED JUNE 19, 2008
BY
BRISTOL TOWNSHIP COUNCIL

TOWNSHIP OF BRISTOL

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PHOTOGRAPHS ON COVER

(clockwise from top left)

War Dog Memorial—Bristol Township Municipal Campus

Delaware River—Burlington-Bristol Bridge

George Washington Elementary School—Levittown

PA Route 413—Town Center District

Silver Lake County Park

Croydon Manor

Edgely Fire Company No. 1

Legacy at West Bristol

BRISTOL TOWNSHIP COUNCIL

Tina Davis, Chairman
Linda Tarlini, Vice Chairman
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Rick Pluta, Member

BRISTOL TOWNSHIP COMPREHENSIVE PLAN COMMITTEE

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Glenn Kucher, Director of Building, Planning & Zoning
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PLANNING ASSISTANCE PROVIDED BY

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CHAPTER 1

INTRODUCTION AND BACKGROUND

Bristol Township last updated its comprehensive plan in 1986. Many of the recommendations of the 1986 Comprehensive Plan materialized, indicating that such planning provides a proactive approach to accommodating change and can assist the township in realizing many of its goals. Although changes within the township over the past 20 years have been modest because of its urban/suburban condition, Bristol must still plan for a sustainable future, one that enhances quality of life and promotes economic vitality. Thus, the township's initiative to update the 1986 Comprehensive Plan is very timely.

This update of the Bristol Township Comprehensive Plan is prepared under the authority granted by the Commonwealth of Pennsylvania to municipalities to prepare comprehensive plans in accordance with the provisions of the Municipalities Planning Code (MPC). Article III of the MPC provides requirements regarding the content and information that must be included as part of a comprehensive plan.

A comprehensive plan should provide a foundation for local planning, a ready resource containing the policies that guide land use decisions in a community. It can help a community to shape its future by guiding the formulation of zoning and subdivision ordinances, the acquisition of open space, transportation improvements, the protection of natural and historic resources, and the provision of community facilities. This update is intended to ensure that the Bristol Township Comprehensive Plan continues to serve as such a resource.

The plan provides a blueprint for housing, land use, community facilities, and transportation. It is not a legal document but assists decision-makers. It contains no rules or regulations but forms the basis for zoning regulations. It has a broad scope and examines the physical, social, and economic characteristics that come together to form what exists today and applies this knowledge to the future.

Issues are addressed in general terms, but the comprehensive plan can make specific recommendations. It is a report that examines how the past has shaped the present, develops a forecast about what will happen in the future, and describes how this future can be shaped to meet a community's wishes.

With these principles in mind, the final plan has evolved from the following four questions:

Where is the Township today?

Identification of major characteristics of land use and recent development, as well as opportunities and constraints that affect the township.

What are the trends for the future?

Examination of regional forces impacting the township, study of population changes and development trends.

Where does the Township want to be?

Articulation of the township's goals for the future that reflect community wants and needs.

How do we achieve our goals?

Examination of the policies of the current plan and land use controls in order to formulate recommendations that will guide growth and development toward desired outcomes.

The Planning Process

The comprehensive plan update for Bristol Township began in late 2005 with the appointment of a Comprehensive Plan Committee made up of the Director of the Building, Planning and Zoning Department, a Township Council member, the Community Development Administrator, the Managing Director, and staff members of the Bucks County Planning Commission. The committee developed a business survey and distributed it to township businesses in March 2008. The results of the survey were compiled and considered by the committee and were used in formulating the comprehensive plan update.

The committee held meetings every two months throughout 2007 and early 2008 to review and finalize drafts of the various components of the comprehensive plan update. These drafts were then submitted to the township planning commission for approval. The planning commission held a public meeting in May 2008 and recommended approval to the township council. After soliciting adjacent municipalities and school districts, and the county for comments, township council adopted the plan in June 2008.

Structure of the Plan

To achieve the purposes outlined above, the update contains the following elements:

1. **Introduction and Background**—This section introduces the plan by describing its purpose and format. An overview of the planning process and the parties involved in the process is also presented.
2. **Goals for Bristol Township/Community Vision Statement**—In this section goals are established that set the general direction of the plan. These goals are derived from the goals and policies of the current comprehensive plan, as well as those found in other relevant planning documents.
3. **Natural Resources**—The critical natural resources found within the township's boundaries are identified in this section. Existing regulations are described and evaluated, and revisions to existing measures and additional strategies that reinforce the protection of natural resources are offered where appropriate.
4. **Development Today and Projected Changes**—This chapter provides data from the 2000 U.S. Census and other sources to build a demographic profile of the current population and offers projections regarding anticipated population growth for the years 2015 and 2025. An up-to-date land use inventory is included in order to determine the type, amount, location, and interrelationships of land uses found in the township. This chapter also updates information on the housing characteristics of the township and the existing analysis of the housing needs of present residents and of those individuals and families anticipated to reside in the township by 2025. The nonresidential development potential of the areas is also appraised and the implications of such development on residential development, transportation resources, and community facilities are considered.

5. **Cultural, Architectural, and Historic Resources**—Current strategies to protect historic resources and policy recommendations and regulatory options are provided to protect the unique features of historic sites and structures, including regulations and policies that encourage adaptive reuse and the rehabilitation of underutilized buildings.
6. **Parks, Recreation, and Open Space Planning**—This chapter identifies the existing park, recreation, and dedicated open space areas in the township. These facilities are analyzed with regard to existing and future needs. This chapter also evaluates the need and demand for additional active and passive recreational facilities, including greenway linkages along preserved open space, natural corridors, and undeveloped areas identified in the open space plan.
7. **Community Facilities and Services**—This chapter analyzes the general adequacy of existing community facilities to meet the needs of current and future residents and develops strategies to improve existing services, where needed. Community facilities and services that are evaluated include police, fire protection, emergency medical services, healthcare facilities, educational facilities, libraries, and municipal facilities.
8. **Water Resources and Usage**—This chapter addresses the adequacy of supply and protection of water resources serving the township. A discussion and analysis of issues related to stormwater management within the township and the adequacy of solid waste management is also included.
9. **Transportation and Circulation**—This component describes transportation facilities in the township. The efficiency of the existing circulation network in moving goods and people throughout the region is analyzed and improvements, such as traffic calming, signalization, and pedestrian crossings are evaluated to enhance vehicular and pedestrian circulation. The potential of mass transit and other alternatives to automobile use is also examined.
10. **Economic Development, Revitalization, and Vitality**—In this chapter the financial trends for the township are assessed along with an evaluation of existing and future expenditures. An assessment of potential revenue and funding sources is provided in order to assist local officials with the cost of implementing public improvements to enhance the township that are in line with the plan's recommendations. The process by which improvements are evaluated and ranked is assessed and recommendations are suggested to assist in making necessary adjustments to this process.
11. **Future Land Use**—This element examines current zoning regulations and district boundaries for their appropriateness in light of existing conditions and assesses whether such regulations and boundaries serve to maintain and enhance the community.
12. **Planning Compatibility**—This chapter discusses the compatibility of, and identifies the relationship between, conditions in the township and in adjacent municipalities. The county comprehensive plan is also examined to ensure consistency with its goals, objectives, policies, and recommended actions. The relationships among land uses, the natural environment, transportation, community needs, and the interdependencies among all these elements of the

township are examined in addition to a discussion related to the interrelationship among the various components of the plan.

13. **Plan of Action**—This chapter lists and describes the policies and recommendations developed in each component of the plan along with a suggested time frame for accomplishing the recommendations. Both short- and long-term implementation strategies are included, providing the planning commission and council with a set of guidelines to follow in making decisions and developing programs for implementing the comprehensive plan. This chapter also provides quantitative and qualitative indicators and benchmarks that provide the municipalities with feedback on their progress toward attaining their goals.

A Brief History

The township's early development dates to William Penn's settlement of the area. In 1686, the Provincial Council ordered the construction of the King's Highway from Philadelphia to Morrisville via Bristol, following the route of an Indian trail which had been in use by the colonists since before 1677. Beginning in 1804, the Bristol and Frankford Turnpike (Bristol Pike) was built on the bed of this road. Bristol Pike is now known as U.S. Route 13. The north–south roads in the township were originally part of a rectangular system of roads laid out by William Penn in lower Bucks County. By the mid-1800s, many of the major arteries which serve the township today were in existence.

During and after colonial times, roads were generally poorly paved and difficult to use, so most traffic was water borne. The Delaware River was the most important route until the Delaware Division Canal was opened in 1830. This canal ran from Bristol to New Hope and on to Easton, where it connected to the Lehigh Canal. Coal from the Pennsylvania anthracite mines was brought by canal barge to Bristol where it was transferred to ships bound for Philadelphia or New York.

The industrialization of Bristol Township and adjacent Bristol Borough began in 1701 with the construction of the Bristol Mills. Silver Lake, then called Mill Pond, provided water power to run the mills. After the Revolutionary War, the mineral waters at Bath Springs, then just inside the township boundaries, became popular. Bath Springs was the most fashionable watering place in America until 1821 when it was eclipsed by the newly opened spas at Saratoga.

In the early 19th century, small settlements appeared in various parts of the township: Centerville (Emilie), Newportville (laid out in 1808 at the head of navigation on the Neshaminy Creek, the township's western boundary), and Tullytown (founded in 1816 on the boundary between Bristol and Falls Townships). The last became a separate borough in 1891.

The Trenton–Philadelphia Railroad, now part of the main Philadelphia–New York line of Amtrak/Conrail was completed in 1835. This railroad and the Delaware and Raritan Canal, built from New Hope to the vicinity of New York City, eventually drew all coal traffic from the New Hope–Bristol Canal and from the port of Bristol.

These transportation systems helped the growth of Bristol Borough but had little effect on the township, which had an economy based on agriculture until the Second World War. Most of the land was used for farming. Tobacco raising reached a peak in 1871. Several fisheries were active in the late 18th and most of the 19th centuries. The largest of these, Badger's, south of Bristol, began operations in 1790.

Landreth's seed farm, in the Bloomsdale area of the township, established in 1784 on 540 acres between Bristol and Edgely, was one of the largest seed producing establishments in the world in the 18th century.

From about 1900 to the early 1920s, a number of interurban trolley lines ran through the township. One went from Trenton to Torresdale via Bristol and Croydon, another from Doylestown to Bristol through Morrisville, a third from Langhorne to Bristol, and a fourth between Newtown and Bristol. It was during this time period that the township's largest industry, Rohm and Haas, began to expand its industrial plant and operations from Bristol Borough into Bristol Township.

With the provisions of commuter service on the railroad and the establishment of these trolley lines, parts of the township became more accessible to Philadelphia and other urban areas, and as a result development increased slightly.

Edgely grew up in the late 19th century around a commuter stop of the Pennsylvania Railroad. Croydon, related to another commuter station, was closer to Philadelphia and grew fairly rapidly. Summer and year-round homes were built along the Neshaminy and in Fergusonville. Nevertheless, growth was slow. The population increased by only 3,373 persons in 120 years—from 1,008 in 1810 to 4,381 in 1930.

In 1940, fewer than 2,000 housing units existed in Bristol Township. These units included farmhouses and summer and year-round, single-family houses in Croydon, West Bristol, Fergusonville, Newportville, Edgely, and other areas generally in the southern and central portions of the township.

During the 1940s, approximately 1,665 additional housing units were constructed, many for World War II workers in the area. At the same time, major expansion at the Rohm and Haas plant occurred to meet wartime needs for chemical and plastic products.

After World War II

In the early 1950s, a crucial event occurred. U.S. Steel commenced construction of the Fairless steel mill in adjacent Falls Township. As a result of this major industrial development and the post-World War II building boom, a new era of residential subdivision began in Bristol Township.

Between 1950 and 1954, some 9,000 housing units were constructed and occupied, with another 3,000 units being constructed from 1955 to 1960. Approximately 65 percent of the township's 1980 total housing units were constructed in the decade of the 1950s. Although "Levittown" was by far the largest residential subdivision to be constructed during the decade, there were many others, ranging in size from some 400 homes in Croydon Acres to a dozen homes in Bath Manor, Maple Shade, and other residential subdivisions.

By 1970, the township's population reached its maximum of 67,498 persons. However, the loss of major industries in the township and the surrounding region, which employed many of the township's residents through the 1970s and 1980s, led to an out-migration of the working-age population and a reduction in family size in the township.

CHAPTER 2

GOALS FOR BRISTOL TOWNSHIP/COMMUNITY VISION STATEMENT

Vision for the Future

The township comprehensive plan update seeks to build upon the goals and objectives from the 1986 Comprehensive Plan while at the same time examine the changes that have occurred during the 20 years since and provide for strategies that can better meet the challenges that the township faces now. Many of the goals and objectives set forth in the previous plan are still relevant today. For that reason the goals and objectives of this latest plan will, in some part, reflect back upon those goals.

The following goals and objectives are organized by topic that corresponds to each section of the comprehensive plan. A goal is an ideal or desired future condition and is usually not quantifiable or time dependent. An objective defines the purpose and commitment to achieve a goal or condition. A business survey was mailed out in March 2008 to solicit comments and issues that helped shape this comprehensive plan's vision of how to improve the business environment in Bristol (See Appendix A).

To implement these goals and objectives, recommended actions were created for each Chapter and are collectively summarized in Chapter 13 Plan of Action and Appendix B.

Overall Goal of the Comprehensive Plan

The overall goal of the *Comprehensive Plan Update* is to create and maintain the physical, economic, and social environment of the township so that it not only becomes, but remains, a superior community in which to reside, be employed, and in which a diversified quality of life is available to everyone. The achievement of this goal will protect the public health, safety, and welfare of the citizens of Bristol Township.

- Promotion of "Smart Growth" principles, which encourage a concentration of development and diversity of uses. This approach is intended to guide development and conserve natural systems, utilizing existing infrastructure, revitalizing growth centers, and encouraging alternative means of transit such as walking and biking.
- Promotion of "Sustainability" principles to preserve environmental resources for future generations. It encourages green building design in compliance with Leadership in Energy and Environmental Design (LEED) standards and the use of solar, geothermal, wind, or other on-site regenerative energy production for both public and private development projects.
- Proper accommodation of the 2008 to 2018 population in sound housing supported by superior municipal services.
- Maintenance and/or re-establishment of land use patterns which create healthful, convenient and prosperous living and working arrangements, including employment opportunities for township residents.

- Development of adequate tax rates that will allow the township sufficient income to provide required municipal services without placing a disproportionate tax burden on residential property owners.
- Provision of adequate, efficient, and cost-effective public facilities and utilities.
- Development of efficient, convenient transportation facilities, including improvements to major intersections, widening of arterial thoroughfares, and expansion of bus lines serving the township.

Development Today and Projected Changes

A. Nonresidential Development

Goal: Encourage nonresidential development that is well integrated and compatible with the surrounding context and character of the area and that has minimal impact on the highway network and other services.

Objectives

1. Encourage high-quality office, commercial, and industrial development to enhance the tax base within the township.
2. Promote adaptive reuse and redevelopment initiatives for abandoned industrial and commercial sites.
3. Require high standards to control nuisances such as objectionable odors, noise, smoke, and hazardous material of any kind.

B. Residential Development

Goal: Provide safe and adequate housing for present and future residents of all socioeconomic characteristics.

Objectives

1. Ensure that the zoning ordinance provides for a variety of housing types.
2. Promote the public health, safety, and welfare by ensuring a quality living environment that provides quality housing through sound zoning and subdivision and land development standards and modern building and fire codes.

Natural Resources

Goal: To maintain and enhance the natural resources found in the township.

Objectives

1. Recognize that the protection of natural resources has direct effects on the health, welfare, and safety of the community.
2. Provide for the protection of critical natural resources including watersheds, groundwater, floodplain, floodplain soils, wetlands, steep slopes, woodlands, and streams.

Cultural, Architectural, and Historical Resources

Goal: To recognize and protect the cultural, architectural and historical resources of Bristol Township so that they are preserved for future generations.

Objectives

1. Recognize and protect historic features, including structures, sites, waterways, villages, and landscapes having a special character or use, affecting and affected by their environment.
2. Preserve and protect historic resources in established historic areas and districts.
3. Promote the preservation of historic resources outside of the established historic areas and districts.

Parks, Recreation, and Open Space Planning

Goal: To provide adequate parks and recreation facilities for all age groups and interests and to promote the preservation of open space as a means to contribute to the quality of life of township residents.

Objectives

1. Recognize that the provision of parks, recreation opportunities, and open space contribute to the quality of life for township residents by offering relief from stress, enhancement of mental and physical fitness, and the ability to be closer to nature and to escape from the built environment.
2. Make use of existing infrastructure and natural corridors for recreation opportunities.
3. Coordinate and cooperate with governmental agencies and other recreation providers to support their efforts.

Community Facilities and Services

Goal: To provide needed and desirable services within the constraints of the township's fiscal abilities.

Objectives

1. Foster the efficient and cost-effective provision and utilization of community services and facilities (i.e., police, fire protection, medical services, schools and colleges, libraries).
2. Provide adequate public protection and preserve Bristol Township as a safe and desirable community.

Water Resources and Usage

Goal: To protect the township's water quality, ensure an adequate water supply to support future growth and development, provide for stormwater management that focuses on water quality and groundwater recharge, and provide adequate wastewater treatment capacity to allow for future development within the township.

Objectives

1. Protect groundwater supply in the township by regulating the use of the land in the area around wellheads serving community water supply systems.
2. Control the quality and quantity of stormwater runoff to prevent the degradation of waterways and flooding.

3. Protect wellheads of community water supply systems from contamination by inappropriate land uses.
4. Provide for and/or maintain water supply and wastewater facilities that effectively serve the existing and anticipated service requirements of residents.

Transportation and Circulation

Goal: To achieve a safe, efficient, rapid, and pleasant circulation system for both necessary and pleasure trips incorporating a variety of modes, including vehicular, bicycle and pedestrian travel.

Objectives

1. Encourage the expansion and utilization of mass transit and nonautomotive modes of transportation.
2. Maintain and promote vehicular and pedestrian mobility, access, and safety throughout the township.
3. Maintain and promote a cooperative process for the future improvement of critical corridors in the region such as Routes 13 and 413 and New Falls Road.
4. Promote access management techniques along arterial and collector roads including limiting the number and location of access points; marginal access streets; shared driveways; and reverse frontage streets.

Economic Development, Revitalization, and Vitality

Goal: To accommodate the needs of the township's business community and improve the business climate by improving the township's quality of life, workforce, and infrastructure.

Objectives

1. Provide an attractive economic environment in which the township's existing and future businesses can thrive.
2. Expand the township's tax base through appropriate commercial and industrial development and redevelopment.
3. Enhance the effectiveness and efficiency of the township's operation and financing.

Future Land Use

Goal: To maintain and/or reestablish land use patterns which contribute to healthy, convenient, and prosperous living and working conditions, including employment opportunities for township residents.

Objectives

1. Promote the planning principles established in this Plan for future development and redevelopment throughout the township.
2. To address the planning and development problems and issues identified in the 11 Special Study Areas (as shown in Map 4).

CHAPTER 3

DEVELOPMENT TODAY AND PROJECTED CHANGES

There are various factors that influence the quality and character of Bristol Township. The comprehensive plan attempts to identify existing conditions and anticipate trends that may affect its future. By understanding these conditions and trends the township can formulate goals, objectives, and actions that address potential problems and capitalize on opportunities. This chapter examines the current demographic and land use characteristics and trends of the township.

Demographic Trends

Population

One of the most important purposes of a comprehensive plan is to assess current conditions and potential trends for the future in order to plan for possible growth and change. Basic demographic measures of population and housing conditions, both past and present, can provide some sense of the key characteristics of a community and an indication of where it is headed. A basic and primary indicator is often population growth over time (Table 3-1).

TABLE 3-1
Population, 1940 to 2005

	1940	1950	1960	1970	1980	1990	2000	2005*
Bristol Township	5,857	12,184	59,298	67,498	58,733	57,129	55,521	54,586
Bucks County	107,715	144,620	308,567	416,728	479,180	541,224	597,635	621,342

Source: U.S. Census

* This figure is based upon Census estimated population.

The township experienced a period of explosive growth in the 1950s with the development of Levittown. From 1950 to 1960, the township experienced a population increase of 386 percent while the overall county increased about 113 percent. Then a period of more modest growth occurred through the 1960s and into the 1970s. The 1980 census shows the first year of population decline in Bristol, and this trend was estimated to continue in 2005. Future population forecasts suggest a reversal with a slight population gain (as discussed later). Since 1970, the population in Bucks County has grown at a steady rate of between 9 and 15 percent and this trend is forecasted to continue into the next decade.

Regional Population Trends

It is also useful to compare Bristol Township population changes to those experienced in the region to gain insight into regional trends affecting the township. Table 3-2 below shows the population for the municipalities surrounding Bristol Township, the 14 municipalities comprising lower Bucks County, Bucks County, the nine county Delaware Valley Regional Planning Commission region, and Pennsylvania.

TABLE 3-2
Population by Area/Region/County/State

	1990	2000	1990 to 2000	
			Amount Change	Percent Change
Bristol Township	57,129	55,521	-1,608	-2.8
Adjacent Municipalities				
Bensalem Township	56,788	58,434	1,646	2.9
Bristol Borough	10,405	9,923	-482	-4.6
Falls Township	35,047	34,865	-182	-0.5
Hulmeville Borough	916	893	-23	-2.5
Middletown Township	43,063	44,141	1,078	2.5
Tullytown Borough	2,339	2,031	-308	-13.2
Total	205,687	205,808	121	0.1
Lower Bucks Region*	267,554	275,614	8,060	3.0
Bucks County	541,224	597,635	56,411	10.4
DVRPC Nine County Region	5,182,705	5,386,867	204,162	3.9
Pennsylvania	11,881,643	12,281,054	399,411	3.4

Source: U.S. Census

* Lower Bucks Region includes Bensalem, Bristol, Falls, Lower Makefield, Lower Southampton, and Middletown townships and Bristol, Hulmeville, Langhorne, Langhorne Manor, Morrisville, Pennel, Tullytown, and Yardley boroughs.

The surrounding municipalities have grown slowly during the 1990 to 2000 period only gaining 121 people or 0.1 percent in population. During this period only Bensalem and Middletown townships have gained population. Bristol Township leads in loss of population. Looking at the larger lower Bucks Region, which includes 14 municipalities there was a modest gain of 3.0 percent with much of the growth concentrated in the townships of Lower Makefield, Bensalem and Middletown. Bucks County as a whole experienced a 10.4 percent population increase, which is above the rates found in the nine-county Delaware Valley Regional Planning Commission and the state as a whole.

Countywide Bristol Township lost the most population from 1990 to 2000. Bristol's population losses, which became evident in the 1980 Census, are likely the effect of several factors, including the loss of large employers, an aging population, smaller families, and regional trends.

Population Projections

Population 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 provides population projections for the nine-county region that it serves. Its most recent projections extend to the year 2030.

Table 3-3 contains a population projection for Bristol Township to 2025. The projection anticipates population growth of 0.85 percent between 2000 and 2025. By comparison the township's population declined by 2.8 percent between 1990 and 2000.

**TABLE 3-3
DVRPC Population Projection, 2010–2025**

	2000	2010	2015	2020	2025	Change 2000–2025
Bristol Township	55,521	55,014	55,360	55,687	55,995	0.85

This population growth will most likely occur as a result of revitalization and riverfront redevelopment projects.

Age

The township's population has been aging, and this trend can be expected to continue. The median age in the township has been climbing steadily upward, rising from 27.7 years in 1980 to 32.1 in 1990, to 35.9 years in 2000. The median age in Bucks County was higher at 37.7 years. As the township's population continues to age, the demand for specialized services and housing for the elderly will heighten.

Race

Other characteristics pertinent to understanding the nature of a community involve its racial and ethnic composition. Over the past 20 years the number of residents who consider themselves nonwhite has increased in both number and percentage of total population (Table 3-4). The township's percentage of nonwhite residents in 2000 (13.9 percent) was well above the county average of 7.5 percent reflecting, a more diverse population.

**TABLE 3-4
Non-White and Hispanic Population**

	1980		1990		2000*			
	Non-White	Percent of Total	Non-White	Percent of Total	Non-White	Percent of Total	Hispanic or Latino	Percent of Total
Bristol Township	4,019	6.8	5,059	8.9	7,703	13.9	2,139	3.9

Source: U.S. Census (BCPC 80:MP-2, 90:MP-11, 00MP-6, DP-1 Profile of General Demographic Characteristics, 2000)

*The 2000 Census featured a change which allowed individuals to select more than one race and which separated racial identification from Hispanic or Latino classification. The total in the table includes those who only selected one race and categorized themselves as "white". It does not include those who selected more than one race of which "white" was one of the categories selected.

Households and Families

Household size has been declining nationwide in recent years due to a number of factors: later family formation, declining birth rates, rising divorce rates, and more young people and older people living

alone. The average household size in 2000 was 2.79 persons, down from 2.94 in 1990 and 3.22 in 1980. For comparison, in 2000, Bucks County's average household size was 2.69 persons.

The number of households in the township totaled 19,733 in 2000. That figure represents a 2.2 percent increase over the 19,314 households counted in 1990. Households in the township were slightly larger than the countywide average, somewhat more likely to have children under age 18, and somewhat more likely to be elderly.

About 38 percent of Bristol households had at least one child under age 18 and about 26 percent had at least one member age 65 or older. The corresponding numbers for Bucks County were 37.7 percent and 23.3 percent, respectively.

Although the majority of township residents lived in traditional family situations, the number of non-family households has increased sharply in the past decade. In 2000, more than 73 percent of Bristol households were family households. That is just under the countywide rate of 75 percent. Most of the township's family households were married couples, with or without children.

The share of non-family households, which consist of unrelated individuals or a person living alone, climbed by 25 percent between 1990 and 2000. Single persons accounted for 80 percent of non-family households in Bristol. Table 3-5 lists characteristics of township households.

**TABLE 3-5
Characteristics of Bristol Township Households, 1990–2000**

Characteristic	1990	2000
Number of Households	19,314	19,733
Average Household Size	2.94	2.79
Average Family Size	3.36	3.26
Family Households	15,147	14,507
Married Couple Families	12,067	10,710
Non-family Households	4,167	5,226
Householders Living Alone	3,434	4,190

Source: U.S. Census, 1990 and 2000

Income and Educational Attainment

Township residents had incomes and levels of educational attainment that were lower than those for the county as a whole, according to the 2000 Census. The median Bristol Township household income was \$48,090. The median income for Bucks County was \$59,727. The median household income in 1999 for the surrounding municipalities ranged from a high of \$63,964 in Middletown Township and a low of \$35,378 in Bristol Borough. Bristol Township compares more favorably to the Table 3-6 shows that while the household income has increased for Bristol over the ten-year period it has not increased at the same rate as the county as a whole. The level of income will have an impact on the types of housing and the demand for goods in services in the community.

TABLE 3-6
Household and Family Income

	Median Household Income		Median Family Income	
	1989	1999	1989	1999
Bristol Township	\$36,245	\$48,090	\$40,130	\$54,308
Bucks County	\$43,347	\$59,727	\$48,851	\$68,727

Source: U.S. Census

In 2000, 81.5 percent of township residents were at least high school graduates, and 11.1 percent held bachelor's degrees or higher. These numbers are both lower than the countywide percentages of 88.6 percent and 31.2 percent. However, it should be noted that since 1990 there has been a 7.4 percent increase in township residents who were at least high school graduates and a 1.1 percent increase in residents holding a bachelor's degree or higher. The level of educational attainment that these numbers suggest should be a factor in decisions that the community makes regarding the types of employers and businesses that the township hopes to attract.

Occupation

Occupation is the kind of work a person does to earn a living. Most township residents pursued white-collar occupations, with a total of about 54 percent employed in managerial, professional, sales, or office work. Another 20.3 percent worked in production or transportation, followed by 12.7 percent in service occupations, and 12.5 percent in construction, extraction, or maintenance. Industry is the type of activity at a person's place of work, the sector of the economy to which a particular occupation belongs. The largest share of township residents, 17.9 percent, worked in manufacturing, followed by 16.7 in retail trade. The education, health, and social services fields employed 15.9 percent of township residents. The occupation and industry types, much like educational attainment, are factors that determine which types of employers and businesses that will be attracted to the township as a place to locate.

Land Use Characteristics

Bristol Township is a typical "inner-ring" or "first-tier" suburban community. America's inner-ring suburbs—once hubs of economic and social activity—have been "shortchanged" in the recent urban renaissance, because they have received little of the benefits of the revitalization occurring in downtowns, nor have they experienced the growth of the outlying areas.¹

Largely urbanized, Bristol Township consists of a diverse mixture of land uses as shown in Table 3-7 and Map 1. Table 3-7 includes township land use information from the previous countywide land use inventory prepared by the Bucks County Planning Commission in 1990. Digital aerial orthophotographs taken in early 2005, and Bucks County Board of Assessment (BOA) information served as primary sources in compiling an updated land use inventory for the township. The acreages and percentages of various land use categories were obtained using computer calculations generated through the county's GIS (Geographic Information System), and ultimately this information was verified by township officials.

¹ According to *Halfway to Everywhere: A Portrait of America's First-Tier Suburbs*, Urban Land Institute (ULI).

In 2006, single-family detached residential uses topped the township for the largest share of land area (3,279 acres) and overall percentage (32 percent). The various residential communities such as Levittown, Croydon, Newportville, and Edgely house the majority of this land use category.

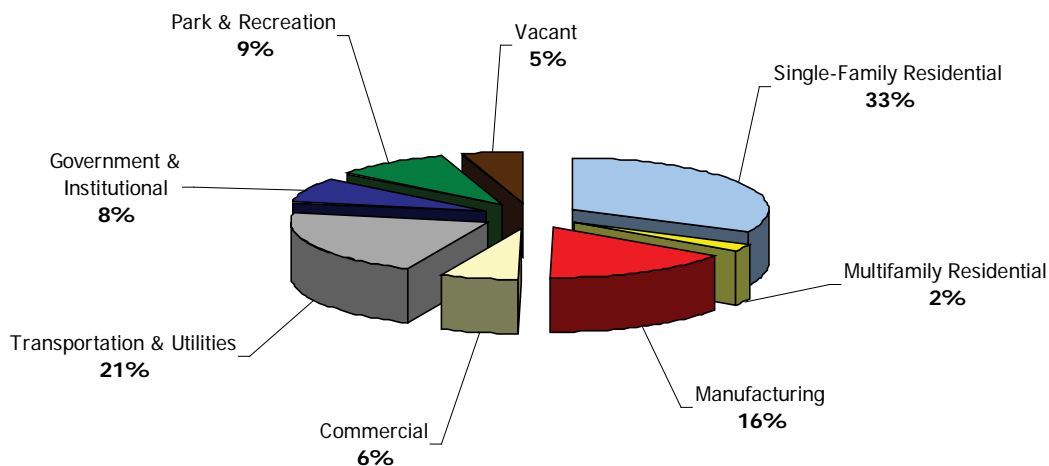
TABLE 3-7
Land Use Characteristics (1990 – 2006)

Land Use Category	1990		2006		1990 to 2006	
	Acreage	Percent	Acreage	Percent	Amount Change	Percent Change
Single-Family Residential	3,230	31%	3,279	32%	49	2%
Multifamily Residential	220	2%	251	2%	31	14%
Manufacturing	1,122	11%	1,479	15%	357	32%
Commercial	635	6%	756	7%	121	19%
Transportation & Utilities	2,219	22%	2,155	21%	-64	-3%
Government & Institutional	758	7%	769	8%	11	1%
Park & Recreation	592	6%	965	9%	373	63%
Vacant	1,430	14%	517	5%	-913	-64%
TOTAL	10,254*	100%	10,171*	100%		

* Municipal acreage totals between 1990 and 2006 differ due to changes in mapping sources and conventions. The percentage totals may not add up to 100 percent due to rounding.

Conversely, multifamily residential land uses² consist of a limited number of townhouse and apartment complexes, comprising about 251 acres or 2 percent of the total land area in the Township.

FIGURE 3-1
Bristol Township Land Use (2006)



The nonresidential land use categories consist of transportation & utilities, government and institutional, commercial, and manufacturing. Collectively, they constitute over half of the area within the township (51 percent). Transportation and utilities use, which primarily consists of rights-of-ways, utility installations,

² Multifamily residential land uses consist of three or more attached dwelling units. This category includes medium- to long-term housing accommodations, such as retirement communities and nursing homes.

and terminal facilities comprises the second highest land area, about 2,155 acres or 21 percent of the total township area. The majority of this land consists of road rights-of-ways that traverse the township.

Approximately 1,479 acres or 15 percent of the total land area in the township is devoted to manufacturing use. These uses include manufacturing industries and printing and advertising industries. Rohm and Haas is the largest operation in the township and individually, accounts for the highest manufacturing land area. The township's six industrial parks contain the majority of the remaining manufacturing acreage.

Commercial uses comprise approximately 756 acres or about 7 percent of the total land area. Commercial uses include wholesale and retail trade establishments; finance; insurance, and real estate businesses; professional and service offices; and hotels. The majority of commercial uses are concentrated along the township's major arterials including Routes 13, 413, New Falls Road, and South Oxford Valley Road.

Government and institutional land uses comprise about 769 acres or about 8 percent of the total land area of the township. These uses include all federal, state, county, and municipal buildings and facilities as well as all private, parochial, and public schools, churches, cemeteries, emergency service facilities, and fraternal organizations. A majority of this land area consists of the township's 18 public and parochial school facilities.

Park and recreation land comprises 965 acres or about 9 percent of the total land area. Much of this land area includes Silver Lake County Park (including Delhaas Woods), Neshaminy State Park, Black Ditch Park, and Queen Anne Park. This category includes a 103-acre site (known as Rohm and Haas Woods) that has been reserved for passive recreational purposes by its owners, Rohm and Haas. Other park and recreation lands include linear greenbelts or greenways that traverse Levittown neighborhoods and various township-owned lands located within or adjacent to the 100-year floodplain of the Neshaminy Creek that are intended for passive recreational use.

Vacant land comprises 517 acres or about 5 percent of the total township land area. This includes parcels without a dwelling unit or nonresidential use, but may include uninhabited structures such as garages and sheds. Vacant land is distributed throughout the township but there is significant acreage located along the riverfront at Maple Beach (70 acres), a tract of land northwest of U.S. 13 (55 acres), and the defunct Jack's Marina site along the Neshaminy Creek (34 acres).

Development Trends

Due to inherent mapping inconsistencies, such as changes in mapping sources and conventions, it is often difficult to reflect precise land use changes over time. Acknowledging this fact, the following information is intended to provide a level of accuracy that is adequate to identify general land use trends and changes in the township.

There have been some notable shifts in the land use characteristics of Bristol Township since 1990 as shown in Table 3-7. The greatest loss between 1990 and 2006 is the vacant land use category, which exhibited a decrease of 64 percent (913 acres). This acreage loss is due in a large part to the conversion of idle land to industrial parks including the 3M (Bristol/Tremont) Industrial Park and Keystone Industrial Park III.

Classified as vacant in 1990, a portion of what is known as the Thiokol site totaling about 106 acres has now been reclassified as government and institutional. Originally the site of a munitions dump, the County purchased the land in 1983. This parcel exchanged ownership between Lower Bucks Vocational Technical School and the County. Currently, the County owns this land and planning is in progress of developing organized recreational facilities on this site. Therefore, if and when this facility is completed, the future classification of this site will change to park and recreation.

Another significant vacant land conversion is a site known as Rohm and Haas Woods containing about 103 acres. In 1990, this site was considered vacant and available for future development. In 2005, Bristol Township purchased a 17-acre portion of the site from Rohm and Haas as part of the Bucks County Municipal Open Space Program, requiring a 25 percent match. Rohm and Haas has committed to preserving the remainder of the site (approximately 86 acres) for passive recreation purposes and will restrict future development.

There have been circumstances when a business goes defunct and/or is currently up for sale since 1990. In these situations, the site has been classified as vacant in 2006. A prime example of this scenario is Jack's Marina site along the Neshaminy Creek.

Due to the vacant to parkland conversions discussed above, the biggest acreage gainer was the park and recreation category, which increased over 63 percent (370 acres) over this 16-year period. Manufacturing also had significant gains of 32 percent (357 acres) due to the aforementioned industrial park conversions.

Commercial uses had a healthy gain of 19 percent (121 acres) between 1990 and 2006. This can be attributed to some new construction, adaptive reuse of existing structures, or possible mapping discrepancies between the two established timeframes. A major contributor to this increase is a 65-acre portion of the 3M (Bristol/Tremont) Industrial Park that was vacant in 1990 but has since been converted to a trucking terminal.

Residential growth during the 16-year period was modest with 2 percent increase (49 acres) in single-family residential use and a 14 percent gain (31 acres) in multifamily residential use. Multifamily developments constructed since 1990 include Legacy at West Bristol.

When comparing 1990 to 2006 acreage for transportation and utilities, there has been a 3 percent loss (minus 64 acres.) In actuality, there was probably a slight gain in land area, but this has been offset in part by a land use conversion of the reserved right-of-way for the planned Interstate 95 to Route 13 extension. The area of the right-of-way was classified as transportation and utilities use in 1990 but has been reclassified to government and institutional 2006.

Plans were originally submitted for the establishment of the Interstate 95 to Route 13 right-of-way interconnection back in 1969, but that has never materialized. With the Pennsylvania Turnpike/I-95 Interchange Project underway, the need for the Interstate 95 to Route 13 connection has been deemed unnecessary. While PennDOT owns the actual right-of-way, the future disposition of this land is uncertain at this time. Bucks County and the Interfaith Housing Development Corporation have expressed interest in acquiring portions of this land for their own specific purposes. Since the right-of-way will no longer be

reserved for highway construction and cannot be considered vacant or available for development, government and institutional use was considered the most appropriate designation for this area.

Overall, government and institutional use remained relatively constant with only a 1 percent increase (11 acres) since 1990. As discussed above, there was significant land area converted to government and institutional from the Interstate 95/Route 13 right-of-way and Thiokol site. This acreage gain, however, was offset by several properties that were once considered government and institutional in 1990 that have since been abandoned or have been converted to another land use.

Prospective Development

The prospect for future development in Bristol Township will likely include the remaining vacant land, as well as adaptive reuse and redevelopment opportunities. Pennsylvania's commitment to providing funding opportunities in hopes of stimulating economic investment and revitalization for distressed areas such as first ring suburbs and targeting areas around transit stops should benefit communities such as Bristol Township. The Croydon Station Transit Redevelopment Investment District (TRID) Study, currently in production, is a prime example of this effort. (For more information on this study, see Chapter 9, Transportation and Circulation.)

The revitalization of the riverfront is vital to Bristol and other in lower Bucks communities. The production of the *Bucks County Waterfront Revitalization Plan* (2005) is a milestone for regional planning efforts in this area, but successful implementation of the plan will require an ongoing public/private partnership. For instance, future policy decisions for the land holdings of Rohm and Haas in the vicinity of the waterfront will have a significant impact on the land use composition, traffic patterns, public accessibility, and ultimately the success of the waterfront redevelopment.

The Pennsylvania Turnpike/Interstate 95 Interchange Project will have a profound impact on the commuting patterns and accessibility to the township and region, as well as the properties affected both directly and indirectly by this project. Once completed, the Pennsylvania Turnpike/Interstate 95 Interchange Project will directly connect the Pennsylvania Turnpike and Interstate 95, thus making Interstate 95 continuous throughout the Mid-Atlantic Region. Project Stage 1 includes building a high-speed interchange that directly connects the Pennsylvania Turnpike and Interstate 95 in Bucks County, a new mainline toll plaza, and mainline widening; while Project Stage 2 brings an additional bridge over the Delaware River parallel to the existing bridge. Project Stage 1 construction is anticipated to begin in early 2008.

Future development will be dependent on various issues such as population and housing trends, the provision of community services and facilities, and the established growth management and future land use policies. Future residential and nonresidential development should promote "Smart Growth" and "Sustainability" principles. Smart growth encourages a concentration of development and diversity of uses. This approach is intended to guide development and conserve natural systems, utilizing existing infrastructure, revitalizing growth centers, and encouraging alternative means of transit such as walking and biking. Sustainability is broad in nature and encompasses all aspects of development to preserve environmental resources for future generations. It encourages green building design in compliance with Leadership in Energy and Environmental Design (LEED) standards and the use of solar, geothermal, wind, or other on-site regenerative energy production for both public and private development projects.

In the following plan sections, there will be further discussion on both residential and nonresidential development status, composition, and planning policies.

Nonresidential Development

This chapter analyzes commercial and industrial activity in Bristol Township as well as the employment characteristics of township residents. Understanding the strengths and weaknesses of the township's economic base 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 employment and economic development opportunities within the township.

Nonresidential Composition

Economic activity in the township encompasses a diverse mix of retail commercial, office, and industrial businesses. Businesses range in size from a small retail store in Levittown to a 200,000+ square foot office and warehouse in Keystone Industrial park. Commercial and industrial activity³ is focused on the collectors, arterials, and highways that crisscross the township.

Retail Commercial—Retail commercial development in the township consists of strip commercial development, shopping centers, and stand-alone businesses, such as restaurants, auto repair shops, gas stations, and garden centers. Retail commercial development in the township is focused on the Route 13 corridor, the Route 413 corridor, State Road, Oxford Valley Road, New Falls Road, and various other locations spread throughout the township. Along Route 13 in Croydon is the Croydon business district, which is characterized by small storefronts placed close to the road. Further north toward Tullytown are roadside businesses, including gas stations, stand-alone retail establishments, restaurants, and motels. The Five Points Shopping Center and Woerner Street Shopping Center are located near the intersection of New Falls and Edgely roads. Along Route 413 is the Town Center Shopping Center and Bristol Plaza. State Road has a number of roadside businesses and small neighborhood commercial stores in Croydon. At the northern border of the township, Oxford Valley Road contains the Queen Anne Plaza and the Fairless Hills Shopping Center, which Bristol Township shares with Falls Township.

Office Development—Office development in the township consists of small medical, legal, and financial services offices and large offices associated with a warehouse or manufacturing facility, often located in an industrial park. Larger office developments not associated with an industrial use occur at just a few locations in the township. Along the Route 413 corridor is the Bucks County Office Center, which holds a variety of tenants. Keystone Industrial Park has some office space; much of the park is devoted to light manufacturing and warehouse and distribution space. Other offices are located in small buildings located along arterials and collectors throughout the township.

Industrial Development—The township contains several large industrial parks, a few large heavy industrial facilities (i.e., Cayuga Concrete Pipe, Coyne Chemical, and Reynolds Plating Supply) and many small- to medium-sized manufacturing and warehouse facilities. Along State Road in Croydon is Croydon Industrial Park and Riverview Industrial Park. Further north along Green Lane is North Wilson Avenue Industrial Park and along Radcliffe Street is the Riverside Industrial Complex. Off of Edgely Road are the three adjacent industrial parks of Edgely Industrial Park, Tremont Industrial Park, and Bristol Industrial

³ For the purposes of this plan, commerce and industry activity includes uses that do not have a residential, public, or religious or institutional component. Uses such as churches, parks and recreation facilities, and municipal buildings and facilities are discussed in other chapters.

Park. Businesses in this location consist mostly of smaller manufacturers, contractor space, and warehousing. In the west portion of the township, off of Ford Road, are Keystone Industrial Parks, I, II, and III. Most industrial space in the township appears to be occupied, although there are limited areas of industrially zoned land still available for development.

Rohm and Haas Property

Rohm and Haas, located at the intersection of State Road and Route 413, is one of the largest landowners in the township with over 880 acres of property. The company once employed over 3,000 workers, but since downsizing its operations over the last few decades, it now employs only about 400 workers. Recently, the company has begun marketing about 150 acres in the Maple Beach area of the township, which is located along the Delaware River. The company is seeking a commercial or industrial user, as the site would require some environmental cleanup. Rohm and Haas would also like to provide the community with long-term tax and employment benefits that only a nonresidential user of the property would be able to provide.

But, in addition to potential contamination issues, there are other obstacles to the site's development. The site is zoned R-1 Residential, which only permits residential and institutional uses. A change in zoning would be needed for an applicant wishing to use the property for commercial or industrial uses. Maple Beach is bounded by 10-foot-high levees, which separate the shoreline from the remainder of the property. Although the Federal Emergency Management Agency (FEMA) flood insurance map identifies this area as being protected from the 100-year flood by the levees located along the edge of the river, the map also notes that the structure could be overtopped by a very large flood or fail in other circumstances. Another concern for this property is the heavy traffic that occurs along this section of the Route 413 corridor throughout the day. The Burlington-Bristol Bridge is a key transportation connection between New Jersey and Pennsylvania and a potential developer of the Maple Beach property must address the major traffic impacts that would occur with development along this corridor.

The Rohm and Haas property plays a significant part in the *Bucks County Waterfront Revitalization Plan*. The purpose of the *Bucks County Waterfront Revitalization Plan* is to articulate a community-based vision that will guide future revitalization efforts along lower Delaware River waterfront communities, including Bristol Township. The plan envisions "opportunity areas" for each municipality that show detailed concept plans for key areas in the study area. The Bristol Township Opportunity Area (Rohm and Haas Property) of the *Bucks County Waterfront Revitalization Plan* envisions the comprehensive redevelopment of the Rohm and Haas property that would create a large amount of high-quality space for office, flex, commercial, and residential development, taking advantage of this superior riverfront location. Mixed use areas along the Delaware River and in the center of the site would include commercial/office, flex, and residential development.

This concept plan also envisions a significant gateway feature that would create an attractive entrance into Bristol Township from the Burlington-Bristol Bridge. The areas around Otter Creek and Hog Run would be restored to a more natural condition, with substantial areas of wetlands reservation. Public open space will be provided along the river's edge, and a riverwalk would run along the river, connecting the site to Bristol Borough and points south. To carry out this vision of the riverfront, the township is in the process of creating a mixed-use overlay zoning district that would permit residential and commercial uses and include provisions encouraging walkability and architectural design controls. The *Waterfront*

Revitalization Plan also recommends the township acquire key open space parcels that will be important in defining the edges of individual projects and enhancing the overall development of the area.

A second opportunity area, the Bristol Borough and Township Opportunity Area, is identified at the eastern border of Bristol Borough between U.S. 13 and the Amtrak rail line. Commercial development would occur along U.S. 13 while the remainder of the site would be dedicated to flex and warehouse uses. The plan suggests that the Delaware Canal, locks and bump bridges be restored to make the canal navigable.

The *Bucks County Waterfront Revitalization Plan* also devises specific recommendations to improve the study area and make it more attractive to residents, businesses, and visitors. Six themes organize these recommendations and serve as goals for the plan:

- Enliven the river's edge by improving waterfront access;
- Incorporate design with development to improve the attractiveness of the area and foster its renaissance;
- Enhance the economy by fostering redevelopment of underutilized lands and buildings;
- Expand mobility and accessibility to and within the study area;
- Foster environmental sustainability of the Delaware River and its tributaries;
- Reinforce sense of place and identity.

Under each theme a set of recommendations is identified to guide future development and preservation efforts. For example, the second theme listed above focuses on the importance of design in bringing people and investment to the waterfront. One of the plan's primary design recommendations is to extend a community's street grid all the way down to the river. Extending the street grid will help maintain a visual and physical connection between communities and the river. Another recommendation is to establish "address streets," streets that are primary travel routes to or within a community. Streets as State Road and River Road should be provided with design guidelines to foster a pedestrian-friendly environment with buildings and infrastructure designed at a human scale.

Thus, in considering the future direction of the Rohm and Haas property, the township must balance the traffic, environmental, and quality-of-life concerns that may occur with a large redevelopment project with the possibilities conceived in the *Bucks County Waterfront Revitalization Plan*.

Water and Sewerage Issues

Despite continuing opportunities for redevelopment, future development will be limited by water and sewerage considerations. As noted in Chapter 7, the Bristol Township Water Department lacks its own water supply sources and must purchase all of the water it distributes from other purveyors. Because of this, the township must compete with other municipalities to obtain an adequate supply of water for its users and potential users.

At the time of this plan's production, the township is under a sewerage moratorium from the Bucks County Water and Sewer Authority because rainwater is infiltrating sewers and causing flows to increase. In addition, the Bristol Township Wastewater Treatment Plant is at or approaching capacity. Currently, the township is in the process of updating their official Act 537 plan, which will address their future wastewater planning needs.

Water and wastewater facilities are key factors in determining the location, nature, and density of future development. Thus, in addition to ensuring a strong regulatory framework that encourages the proper location and development of nonresidential uses, the township places a high priority on addressing outstanding infrastructure issues related to water supply and sewer capacity to provide certainty to new and existing commercial and industrial users of these services.

Employment

According to the 2000 U.S. Census, 68 percent of the Township's population, age 16 years or older, participates in the labor force.⁴ The Census data, indicate that 3.1 percent of Township residents were unemployed in 2000. In comparison, the County labor force had a 69.4 percent participation rate and a 2.4 percent unemployment rate in 2000.

TABLE 3-8
Employment, Bristol Township and Bucks County, 2000

	Population, 16 years and older	Civilian Labor Force	Not in Labor Force	Participation Rate	Unemployment Rate
Bristol Township	42,750	29,018	13,697	68.0%	3.1%
Bucks County	461,356	320,110	141,246	69.4%	2.4%

Source: US Census, 2000

Tables 3-8 and 3-9 detail Bristol Township residents by their occupations and by the industries they work in. Table 3-8 indicates how township residents are employed by *occupation* or what they do for a living regardless of industry. For example, a truck driver who delivers produce is classified as Production, Transportation, Material Moving Occupations. Table 3-9 indicates how residents are employed by *industry*. So that same truck driver is classified in the second table under Agriculture, Forestry, Fishing and Hunting, and Mining. Many times the resident's occupation and industry will be the same (e.g., a construction worker).

The highest percentage of residents are employed in Sales and Office occupations (e.g., cashiers, travel agents, and secretaries) followed by Management and Professional occupations (e.g., engineers, physicians and executives) and Production, Transportation, and Material Moving occupations (e.g., machinists, drivers, and welders). Together these three categories of occupations make up more than 73 percent of the Township's work force. Construction, Extraction, and Maintenance occupations (e.g., electricians and mechanics) account for 12.5 percent of all resident occupations and Service occupations (e.g., firefighters, home health aides, and childcare workers) account for nearly 13 percent of all resident occupations. Farming, Fishing, and Forestry occupations account for an insignificant percentage of resident occupations.

⁴ Labor force is defined as those persons age 16 years and over who are employed and actively seeking employment.

TABLE 3-9
Resident Occupation, 2000

Occupation	Number	Percentage
Management, Professional, and Related Occupations	6,288	22.7%
Service	3,532	12.7%
Sales and Office	8,785	31.7%
Farming, Fishing, and Forestry	7	0.03%
Construction, Extraction, Maintenance	3,471	12.5%
Production, Transportation, and Material Moving	5,626	20.3%
TOTAL	27,709	100.0%

Source: US Census, 2000

TABLE 3-10
Resident Employment by Industry, 2000

Industry	Number	Percentage
Agriculture, Forestry, Fishing and Hunting, and Mining	52	0.2%
Construction	2,112	7.6%
Manufacturing	4,966	17.9%
Wholesale Trade	1,559	5.6%
Retail Trade	4,618	16.7%
Transportation and Warehousing, and Utilities	1,725	6.2%
Information	840	3.0%
Fire, Insurance, Real Estate, and Rental and Leasing	1,757	6.3%
Professional, Scientific, Management, Administrative, and Waste Management Services	2,112	7.6%
Educational, Health and Social Services	4,392	15.9%
Arts, Entertainment, Recreation, Accommodation, and Food Services	1,481	5.3%
Other Services	1,331	4.8%
Public Administration	764	2.8%
TOTAL	27,709	100.0%

Source: US Census, 2000

As Table 3-10 indicates, the main employment strengths in the township are manufacturing, retail trade, and educational and health services. The largest employer in the township is Bristol Township School District—the 22nd largest employer in the county. Another strong employment base in the township is manufacturing. Although the Census does not detail how many residents are employed in township-based businesses, almost 18 percent of the residents are employed in this economic segment. Given the strong presence of manufacturing and warehousing companies, it is likely that many residents employed in these industries work locally.

Zoning Characteristics

In addition to market conditions, zoning determines where nonresidential uses will be located and at what level of intensity. The township's zoning ordinance was updated in 2002 and several of the commercial districts were modified to set a new direction for nonresidential development in the township. There are eight primary zoning districts in the township that permit commercial, office and industrial activities. Each of these districts is located along arterial highways and major collectors to capitalize on traffic and land use patterns in order to maximize economic and employment opportunities.

C Commercial—The purpose of this district is to provide for the creation and continuation of retail, service and office development in appropriate areas throughout the Township. The district contains required design standards for development taking place along Route 13 and State Road that address parking, street trees, signage, lighting, landscaping, and building design to foster a uniform streetscape and more pedestrian-friendly atmosphere. These standards serve as the implementing mechanism of the *Route 13 Revitalization Study*.

CN Neighborhood Commercial—The purpose of this district is to provide for the neighborhood shopping and servicing needs of the Township population, and require reasonable standards for commercial development in order to provide for the public convenience, and avoid undue congestion on area roadways.

P-O Professional Office—The purpose of this district is to provide standards for the development of office space for health and other professions, businesses and related uses which are necessary to service Township residents.

CS Shopping Center—The C-S Shopping Center District is designed to provide for the appropriate development of a modern, well-designed, integrated retail shopping center. The district is established so that the principal use of land is for commercial and service uses to serve surrounding residential areas and in which traffic and parking congestion can be reduced to a minimum in order to preserve residential values and promote the general welfare of the surrounding area. The district contains additional design standards for building locations, parking, pedestrian circulation, and loading areas.

M-1 Light Manufacturing—The purpose of this district is to provide areas in the township for manufacturing, research, warehousing and similar uses.

M-2 Heavy Manufacturing—The purpose of this district to provide areas in the township for large-scale industrial operations and compatible uses that are sufficiently buffered from residential areas.

P-I Planned Industrial—The P-I Planned Industrial District is established as a district in which the regulations are intended to permit and encourage industrial development that will be so located and designed as to constitute a harmonious and appropriate part of the physical development of the Township, to contribute to the soundness of the economic base of the township.

TC Town Center (overlay district)—The purpose of this district is to provide for the development of office and conference space, hotels, and other related uses along the Route 413 corridor which serves as a gateway to the township. The district contains required design standards that address parking, street trees, signage, lighting, landscaping, and building design to foster a uniform streetscape and more pedestrian-friendly atmosphere. These standards serve as the implementing mechanism of the *PA Route 413 TCDI Study* and are intended to assist in the redevelopment of this important commercial corridor.

Zoning Issues

Because redevelopment continues to occur—despite a general lack of open and vacant sites—the township should be prepared to accommodate and shape potential outcomes from future commercial, office, and industrial development. The township's zoning and use regulations should be examined to ensure that sufficient standards have been provided to control potential impacts from nonresidential uses.

For example, in the Retail and Consumer Service use regulations, consideration should be given to creating a convenience store use. A convenience store use could establish a minimum lot size, limit locations to arterials, establish hours of operation, and require a traffic impact study to be performed.

Service stations, once abundant in Bristol Township, have recently experienced a spike in closures. This poses a concern for township officials, who have expressed a need to have these sites cleaned up and redeveloped. For those abandoned service stations located on main corridors in the township (Route 413, 13, New Falls Road) the preference is to redevelop the sites as an entirely different use. An evaluation of abandoned service stations will identify preferred reuse options of these properties as a basis of future discussions with prospective developers.

Large Retail Store (D2) and the CS Shopping Center zoning district could be provided with updated standards to reduce the aesthetic impacts often associated with these uses. For example, the use could require the use of high-quality materials, such as brick, stucco, or textured concrete or require that ground floor facades contain awnings, arcades, or windows over a minimum percentage of its frontage. The use could also require public amenities such as pedestrian orientations and linkages, an outdoor plaza, patio, or water feature and special landscaping requirements. Such standards would help encourage better development outcomes than the faceless, low-quality construction that typifies retail development in many communities.

Two particular uses appear to be harming the township's image as an up-and-coming economy: check cashing establishments and used car lots. Check cashing establishments are often associated with low-income neighborhoods and can be an eyesore because they lack high-quality landscaping and make use of iron bars and chains to secure the building. Used car lots are often established on lots that appear to be otherwise vacant—except for the cars themselves and a temporary trailer that is used for an office. Little to no landscaping is provided for used car lots and, besides a low-quality appearance, used car lots convey a sense of transition and impermanency.

Location standards and licensing requirements for check cashing establishments (Use D29) are provided in the township zoning ordinance to help control the economic impacts of these businesses. However, the use could be further supplemented by limiting the hours of operation of such businesses, by prohibiting the use of bars, chains, or similar security devices that are visible from a public street or sidewalk, and by requiring additional landscape and design controls. Use D17a Automotive Sales – Used, could be provided with further standards to control lighting impacts, provide an additional setback from the right of way for the display and storage of vehicles, require a permanent building of a minimum square footage for offices, show rooms, and display, and additional landscape buffering. Such standards would help reduce visual impacts and establish a sense of permanency to newly proposed used car lots, as well as requiring that the owner fully invest in the property's potential.

Summary of Recommended Actions—Nonresidential Development

- The township should place a high priority on addressing outstanding infrastructure issues related to water supply and sewer capacity to provide certainty to new and existing commercial and industrial users of these services.

- In considering the future direction of the Rohm and Haas property, the township must balance the traffic, environmental, and quality-of-life concerns that may occur with a large redevelopment project with the possibilities conceived in the *Bucks County Waterfront Revitalization Plan*.
- Consider the establishment of a convenience store use and development standards for its uses including minimum lot size, limit locations to arterials, establish hours of operation, and require a traffic impact study to be performed.
- Conduct an evaluation of abandoned service stations in the township and explore a means for clean up and redevelopment. Examine preferred reuse options for these properties as a basis of future discussions with prospective developers.
- Large Retail Store (D2) and the CS Shopping Center zoning district could be provided with updated standards to reduce the aesthetic impacts often associated with these uses.
- Supplement standards for check cashing establishments (Use D29) to limit hours of operation, and provide design controls such as prohibiting use of bars, chains, or similar security devices that are visible from a public street or sidewalk.
- Provide additional standards for Automotive Sales (Use D17a) that will reduce the visual impact. Such standards could control lighting impacts, provide additional setbacks for display and storage of vehicles, require a permanent building of a minimum square footage for offices, show rooms, and display, and provide additional landscape buffering.

Residential Development

Ensuring a well-planned and equitable base of housing is vital to providing for the fundamental needs of the township's residents. This section of the plan analyzes existing residential development and evaluates the strengths and weaknesses of the local market. This section pays particular attention to what the housing needs of the community are and how the township can further help to meet these needs.

Residential Composition

The dominant land use in Bristol Township is, and has been since at least the 1950s, residential. The land use survey reveals that approximately 34 percent of the township's land area is occupied by residential uses. Table 3-11 shows a breakdown of housing types found in the township. This data was gathered from the 2000 Census Summary File 3 – Sample Data which provides a sampled estimate of the different types of housing units. The most common type of housing, with over 76 percent of the total number of units and 32 percent of the total land area, is single-family detached.

TABLE 3-11
Housing Units by Type, 1990–2000

Housing Type	1990		2000	
	Units	Percentage	Units	Percentage
Single-family detached	15,232	75.88%	15,740	76.83%
Single-family attached	656	3.27%	684	3.34%
Twins or Duplexes	139	0.69%	211	1.03%
Multifamily	3827	19.07%	3,714	18.13%
Mobile Homes	99	0.49%	128	0.62%
Seasonal Units	120	0.60%	9	0.04%
TOTAL	20,073	100%	20,486	100%

Below are brief descriptions of each housing type as well as a general description of where these housing types are found in the township.

Single-family detached—As mentioned above this housing type is the most common and is found throughout the township. The single-family detached homes in Bristol Township for the most part are located on lots of one-quarter to one-third of an acre. The Levittown neighborhoods include nearly 10,000 units of single-family detached housing which is approximately half of the total housing units in the township and 63 percent of the single-family detached units. Other large concentrations of single-family detached housing include Croydon, West Bristol, Edgely, Newportville, and Fergusonville.

Single-family attached—These are units attached by walls that extend from ground to ceiling. The Fleetwing neighborhood off Green Lane has the highest concentration of single-family attached units in the township.

Twins or duplexes—These units are semidetached, connected along a common party wall to a similar unit. There are only two dwellings in a structure. The neighborhood adjacent to the Venice-Ashby neighborhood has a concentration of twins and duplexes, especially Schumacher Street and its intersecting streets. Twins and duplexes are also interspersed in Croydon and Edgely.

Multifamily—These are units in one structure that are attached below and/or above other units (e.g., apartment building). Multifamily developments include apartment complexes, condominium developments, retirement complexes and nursing homes. Apartment complexes are mostly found in the areas to the west of the Pennsylvania Turnpike including: Croydon Station on Route 13 in Croydon, Glen Hollow on Newport Road, Bristol Gardens on Route 413, Levittown Trace on Ford Road and Venice-Ashby at Beaver Dam Road and Lakeland Avenue.

Mobile homes—Mobile homes are found in Bristol Township on scattered sites throughout the township, but there are no mobile home parks.

Seasonal units—These are units such as boats, recreational vehicles, vans, and other similar types vehicles used for temporary living.

Housing Age

The housing stock in Bristol Township was largely constructed during the period from 1940 and 1969. This time represents 74.5 percent of the total number of housing units in the township. The years from 1950 to 1959, which correspond to the development of Levittown, represent 53 percent of the total. Only 19.5 percent was constructed after 1970. The age of the housing units in the township may become problematic if the deferral of maintenance becomes widespread. Older dwellings require maintenance to maintain their quality and value. Furthermore, studies have shown that the major systems in homes require replacement every 25 to 30 years. As Table 3-12 shows, most homes in the township are nearing the age where, if the major systems have not been replaced, these systems will need to be replaced.

**TABLE 3-12
Housing Units by Year Built**

Year Built	Units	Percentage
1999 to March 2000	45	0.23%
1995 to 1998	214	1.08%
1990 to 1994	625	3.17%
1980 to 1989	1,020	5.17%
1970 to 1979	1,851	9.38%
1960 to 1969	2,472	12.53%
1950 to 1959	10,509	53.26%
1940 to 1949	1,784	9.04%
1939 or earlier	1,213	6.15%

Since 1975, the Bristol Township Office of Community Development has carried out a program providing monetary assistance to homeowners for housing rehabilitation. It helps homeowners upgrade their residences to a decent, safe, and sanitary condition using Housing Quality Standards and local codes. The funds are primarily provided by the U. S. Department of Housing and Urban Development (HUD) and occasionally from the Pennsylvania Department of Community and Economic Development (DCED). At the present time, assistance up to \$15,000 can be provided in the form of forgivable loans. Homeowners must apply for assistance and meet income guidelines as determined by HUD.⁵ Emergency and roof stabilization assistance are also provided utilizing the same guidelines.

Housing Value and Affordability

The median housing value for the township according to the 2000 Census was \$107,700. In comparison, the lower Bucks region showed a median value of \$140,450, and the county as a whole had a median value of \$161,900. The lower median value for the Bristol Township as compared to the lower Bucks region and the county may be due in part to the township's older housing stock and the lower rate of new residential construction and smaller lot sizes.

To aid in providing affordable housing to residents Bristol Township's First Time Homebuyer Program utilizes funding from the Pennsylvania Department of Community and Economic Development (DCED) under the Commonwealth's federally-funded HOME program. Bristol Township must compete for this funding. If awarded, the program offers first-time homebuyers mortgage and refinancing assistance, down payment assistance and housing rehabilitation. This funding is targeted exclusively toward currently existing housing units in the Township. Liens are placed on the property for this assistance. Over time, 50 percent of the lien is forgiven. Interested persons desiring to become first-time homebuyers must apply for assistance and meet income guidelines as determined by HUD.

Recent Residential Development

Infill development occurs when new construction is built on empty parcels within developed areas. As communities grow, there are some parcels that remain undeveloped; others may become vacant due to demolition. These empty parcels are opportunities for infill development. Redevelopment occurs on land that was previously occupied is razed and reconstructed as either the same use(s) or different use(s). As

⁵ Qualified projects are written up by a qualified staff Rehabilitation Specialist, the work is bid out, and the lowest qualified bidder is awarded the rehabilitation contract. The Rehabilitation Specialist oversees all phases of the work.

business age or market conditions change, these building or uses may be converted to satisfy a new or changing market demand.

Infill development and redevelopment can be residential, commercial, or mixed-use in character and can include projects which increase the intensity of development on underutilized sites.

Residential developments over 10 units in size were examined to determine what could be learned about recent trends. Since the township is largely built-out, a fact that was pointed out in the previous comprehensive plan, it can be expected that new developments taking place will either be on redeveloped sites or in-fill development on empty parcels within developed areas. The recent developments that were examined show examples of both of these conditions.

Redeveloped sites

Wistarwood

The Wistarwood development was constructed in the early 1990s on 84.5 acres of a former automobile salvage yard. The development contains 281 single-family detached homes on lots between 7,700 and 19,000 square feet. Nearly 12 acres of open space was preserved as part of the development. Wistarwood is located in the northeast section of the township.

Dolphin Court

The Dolphin Court development was constructed in the early 1990s on 4.43 acres. The site was formerly used as the county's swimming club. The development contains 14 single-family detached homes on lots between 10,000 and 17,564 square feet. Dolphin Court is in the West Bristol area of the township off Newport Road.

Infill development

Newport Village

The Newport Village development was constructed in the early 1990s on 23.8 acres of vacant land. The development contains 118 single-family detached homes on lots between 5,000 and 16,537 square feet. Newport Village is in the West Bristol area of the township off Newport Road.

Legacy at West Bristol

The Legacy at West Bristol was under construction at the time this plan was prepared. The 9.4-acre site, which prior to development was vacant, contains 116 multifamily dwelling units in 11 two and three-story buildings. The development is age-restricted, meaning that residents must be aged 55 and older. Approximately 50 percent of the site is reserved for open space. Legacy at West Bristol is located in the West Bristol area of the township adjacent to I-95.

The recent inventory of redeveloped and infill development sites are generally appropriate for Bristol Township. Although the construction of age-restricted (or age 55+) developments in the township is an area of concern. While there has been a significant increase in age-restricted developments throughout the region, over construction may reach a saturation point in the housing market. In the case of Legacy at West Bristol, the vacancy rate is higher than anticipated, and the developer has been having difficulty selling these units. Therefore, township officials should continue to monitor existing and proposed age-restricted developments to ensure they satisfy local market demands.

Another area of concern is the minimum lot area, particular for Newport Village. This development is located in the R-4 Multifamily Residential zoning district which permits a minimum lot area of 5,000 square feet. However, township official's sentiments are that these lot sizes may be too small given its context and location within the township. Therefore, township officials may wish to examine the R-4 district (and associated area and dimensional requirements) to determine its appropriateness. If appropriate, the R-4 district regulations may be amended to increase the minimum lot area, or portions of the R-4 district could be rezoned to a more appropriate zoning district designation, such as the R-3 Residence zoning district (minimum lot area of 6,500 square feet) or R-1 Residence zoning district (minimum lot area of 10,000 square feet).

Township officials will continue to monitor infill development and redeveloped sites to ensure that they are appropriate for the context and setting in which they are located.

Enhancement of Existing Residential Areas

While there is limited availability of land area for large-scale development outside of the Bristol Waterfront Opportunity Area, small-scale residential development and redevelopment is anticipated to occur. Township officials will play a role in the outcome of any new development through the planning process and through the township's land use controls, most notably the zoning ordinance and subdivision and land development ordinance. In the paragraphs below, different types of development are discussed. These types of development should be promoted and township land use regulations should ensure that these types of uses are allowed.

Traditional Neighborhood Development

Traditional neighborhood development (TND) is an alternative to the conventional post-World War II subdivision pattern typified by Levittown and inherently produced by most zoning ordinances. Designers of traditional neighborhood developments create a sense of community for residents, by having a pedestrian oriented design and central community facilities, parks and stores, reminiscent of pre-World War II small-town character.

This type of development technique could be used in the development of the Bristol Waterfront Opportunity Area. The Waterfront plan envisions this area as a mixed-use area, allowing for the development of both residential and commercial uses. The plan also encourages mixed lot sizes, a vertical mixing of uses, walkability, and architectural design controls. These attributes are all elements of traditional neighborhood design.

Transit-Oriented Design

Transit-oriented design (TOD) is an approach to urban design that encourages pedestrian-oriented activity centers linked throughout a region by transportation corridors. Often centered on a public transit stop (bus or rail) this form of development de-emphasizes the dependence on the automobile created by traditional suburban development. Transit-oriented design can be implemented through zoning ordinances, capital improvements, special area plans, redevelopment plans, and site design.

TODs have a commercial/office district and a central transit stop at their core. Within the core, storefronts line the sidewalks; there are central public spaces; and parking is located on street, behind buildings, and in underground or above ground structures. Public plazas and open space are integral

features of the core. The commercial core is surrounded by high- and medium-density housing. A mix of unit types (apartment buildings, duplexes, single-family homes on small lots, and accessory apartments) is encouraged. Uses that require large amounts of land, such as low-density housing, auto sales lots, or industrial complexes are located outside a ten-minute walk to the core.

Streets within a transit-oriented development are laid out in a simple form, with multiple ways of getting to a destination, so that all traffic is not funneled onto a single artery. Regional highways pass on the edge of a transit-oriented development, rather than cutting through the middle. Within the TOD, streets are designed for slow-speed traffic and on-street parking. Bicycle lanes may be placed on collector streets, and bicycle parking facilities are located at destination points. Street trees and sidewalks line all streets.

TODs would be most appropriate near the Croydon train station. The areas around bus stations and along bus routes may also have some potential for this type of development.

During the production of this plan, the Croydon station area was studied in detail as part of a Transportation Revitalization Investment District (TRID) study. The recommendations of the TRID study will be incorporated in the Future Land Use Plan chapter of this plan.

Projected Housing Growth from 2000 to 2020

The following formula estimates the increase in residential units from 2000 to 2020 using the estimated change in population for the same period. The projected population total for the township to 2020, as supplied by DVRPC, was subtracted from Census 2000 population totals to determine the projected amount of population grown for the township from 2000 to 2020. That number was then divided by the average number of persons per dwelling unit in 2000, obtained by dividing the Census 2000 population by the Census 2000 total of housing units. That calculation provided a projected number of new units for the period 2000 to 2020 for the township. That figure, added to the Census 2000 housing unit total, provided a projected total of housing units to 2020.

The following assumptions were used to develop this projection:

1. The Census 2000 amounts for population and housing units are approximately correct and take into account all units constructed up until the end of 1999.
2. The population projections of the DVRPC to 2020 are approximately correct.
3. The use of the average number of persons per dwelling unit to conduct this projection provides an accurate measure of the amount of housing that will be needed for the projected population and accurately accounts for the effect of vacancies on these projections.
4. The average number of persons per dwelling unit will remain constant and equal the average number calculated for 2000 throughout the entire period.

TABLE 3-13
Projected Housing Growth, 2000–2020

	Census 2000 Housing Units	Census 2000 Population 2000	DVRPC Projection to 2020	Population Growth 2000– 2020	Persons Per Dwelling Unit	New Units 2000– 2020	Total Units 2020
Bristol Township	20,486	55,521	55,687	166	2.66	60	20,546

Source: U.S. Census

The above projection indicates a possibility of an additional 60 units in the township by the year 2020. These 60 units represent a 0.3 percent increase over a 20-year period, which is slightly lower than the 2 percent increase the township experienced in housing growth in the period from 1990 to 2000.

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 the year 2020. The nature of that growth will be dependent on future housing markets and the growth management policies and programs of the township. For example, potential residential development related to the Bristol Township waterfront revitalization may result in a greater number of dwelling units than currently projected for the township.

As mentioned before, the township is largely urbanized with few remaining vacant parcels, therefore, the township can expect challenges in terms of site development for these parcels. These challenges may come from the new development’s impact on natural resources or existing neighborhoods and development, or from environmental clean up issues of redeveloped sites. However, these challenges have been overcome in the recent past as evidenced by the discussion of the four examples of recent residential development found above. This plan is meant to serve as a guide to the township on how these anticipated new units will be provided for in terms of location and type of development.

Summary of Recommended Actions—Residential Development

- Continue administering township-wide Homeowner Occupied Housing Rehabilitation Program to providing monetary assistance to qualified residents.
- Continue to monitor existing and proposed age-restricted developments to ensure they satisfy local market demands.
- Continue overseeing infill development and redeveloped sites to ensure that they are appropriate for the context and setting in which they are located.
- Examine the R-4 Multifamily Residential District (particularly the minimum lot area standard) to determine its appropriateness within context and location of the township. If appropriate, the R-4 district regulations may be amended to increase the minimum lot area, or portions of the R-4 district could be rezoned to a more appropriate zoning district designation.
- Explore the feasibility of enhancing existing residential areas through the incorporation of alternative housing developments in appropriate locations throughout the township including traditional neighborhood development (TND) and transit-oriented design (TOD).

CHAPTER 4

NATURAL RESOURCES

The natural resources in Bristol Township offer opportunities and constraints for development. They can be amenities such as woodland areas, or they can severely limit the type and nature of development such as within floodplains. Natural resources perform processes necessary for human life and must be protected. Disregard for the environment can lead to problems such as loss of property due to flooding and erosion and sedimentation, or reduced quality of life. Understanding natural resources and how to preserve them is important so that they benefit rather than degrade the quality of life in the township.

The township is generally built out with most of the remaining vacant areas having some type of resource restriction that prevented development in the past. Resources have also been altered in the past such as the filling in of floodplains, which may cause problems in the future. Township officials should protect the existing resources and improve what has been neglected.

The following paragraphs describe the important resources in the township along with possible actions to protect and enhance them.

Geology

Geology affects future planning and land use decisions through impacts on water supply and topography and soil characteristics. The underlying geology has a significant impact on the water yield of wells. In Bristol Township, most of the municipality is served by public water supply that originates from surface waters (i.e., Delaware River). However, the Bristol Borough Edgely Wellfield (located in Bristol Township), contains three active wells that supplement the potable water supply to the area. Additionally, there are individual on-lot wells still servicing a portion of Bristol Township. The four geologic formations found in the township are shown on Map 2.

Most of the township south of Black Ditch Creek and Interstate 95 is underlain by Trenton Gravel complex which is made up of sand, gravel and clay that have not yet consolidated into stone. This geologic complex was created by sediments washing down from glaciers which once covered portions of North America. The Trenton Gravel Complex typically yields 200–300 gallons per minute of fair quality potable water. The Bristol Borough Edgely Wellfield is located in this formation.

The Pennsauken and Bridgeton formation is composed of quartz, yellowish brown gravel and sand created by glacial outwash. This formation is located north of Black Ditch Creek along the northwestern extent of the Trenton Gravel Complex. This formation could be an important source of groundwater with potential yields of more than 7,000 gallons per minute.

Wissahickon schist underlies the upper portion of the Neshaminy Creek and Queene Anne Creek in Bristol. This is a sedimentary quartz, feldspar, mica schist and gneiss. The formation is exposed where the Neshaminy Creek has cut through overlying Trenton gravel of the coastal plain. These formations can potentially yield approximately 25–150 gallons per minute.

Mafic gneiss, a metamorphic hybrid igneous rock, underlies the upper reaches of Black Ditch Creek. Water yields of 20–100 gallons per minute can be found in this formation. A small portion of granitized gneiss is located along the Neshaminy Creek near Route 13.

The township's potable water comes from the ground and the Delaware River. Using groundwater as a public water supply is generally less expensive than using surface water since the costs to acquire land for wellheads is generally less than the treatment of surface water supplies. However, the major issue regarding groundwater is contamination.

Groundwater contamination is very costly to remediate and to provide the necessary treatment for compliance with drinking water standards. In addition, once groundwater is polluted, it may be contaminated indefinitely. Even if groundwater remediation is undertaken, it is a long and difficult process to attempt to restore water quality.

Contamination of groundwater has occurred in several areas of the township due to leaking underground storage tanks and industrial pollution. Volatile organic compounds were found in well and surface waters at the Croydon TCE site on River Road. The name of the site refers to the presence of trichloroethene (TCE) which is a heavy, colorless, toxic liquid. TCE is used to degrease metals, as an extraction solvent for oils and waxes, as a refrigerant, in dry cleaning, and as a fumigant. The site was remediated in 2006 and observations of water quality continue. A management plan is currently being implemented for the Rohm & Haas landfill site. This site contains contaminated soil, groundwater, and surface water.

The township has surface water supplies, so dependence upon groundwater is less important. Groundwater should be preserved by ensuring efficient use, minimizing additional withdrawals, promoting infiltration of stormwater, and encouraging reuse.

Additional discussion on water quality and quantity is provided in the Water Resources and Usage chapter of the plan.

Topography

Bristol Township lies within the Coastal Plain and the Piedmont geological regions. The Coastal Plain is relatively flat with a grade of less than 10 percent. The Piedmont has higher elevations with rolling topography. The divide between the two regions is the fall line that roughly follows New Falls Road, which has slopes greater than 20 percent. The lowest elevation in the township is along the Delaware River at about 5 feet above mean sea level. The highest point in Bristol is in the northern corner north of New Falls Road.

The environmental impacts of insensitive development practices on steep slopes can be significant. Any disturbance of existing groundcover and topsoil on steep slopes can produce increased rates of erosion and sediment loading. Without established vegetation cover, steep slopes yield greater volumes and more rapid rates of stormwater runoff, which contributes to more frequent flooding. Because of severe on- and off-site impacts, development on steep slopes must be carefully regulated through land use planning and performance standards.

Slopes of 15 to 20 percent are considered steep and disturbed areas will yield heavy sediment loads, while very steep slopes over 25 percent grade produce heavy erosion and sediment loading when disturbed.

The township zoning ordinance now restricts disturbance of slopes of 15 percent or greater at the following rates:

Slope	Protection Ratio
15–25 percent	70 percent
25+ percent	85 percent
Forested Slopes (15+ percent)	80 percent

Hydrologic Resources

Watersheds

A watershed consists of all the land and waterways that drain into the same body of water. Smaller watersheds join with other watersheds to drain into larger watersheds; hundreds of watersheds, including those that cover Bristol Township, ultimately drain into the Delaware River and Neshaminy Creek (see Map 2).

The Delaware River directly drains the areas of the township east and north of Bristol Borough. Almost three quarters of the township is drained by Mill Creek and its tributaries, Black Ditch and Queen Anne Creeks, which empty into the Delaware. The Neshaminy Creek drains the western edge of the township west of Route 13 and much of Bucks County.

Watersheds are the most logical basis for managing water resources. Watersheds themselves are just one part of the hydrologic cycle, the process of water moving through our environment. By planning and providing regulations on a watershed basis, downstream and downhill areas are ensured protection from impacts such as excessive groundwater withdrawals and pollutant releases.

Waterways

The Delaware River and Neshaminy Creek are the township's largest waterways. Both provide for recreation and stormwater drainage, but the river also provides a source of drinking water. The river along Bristol Township is tidal, with a mean range in tide of 7.6 feet at Edgely. Normally the salinity front from the Atlantic Ocean does not advance beyond south Philadelphia.

As with most urbanized areas, Bristol Township's waterways may exhibit the types of water quality problems that are generally associated with automobile-dependent, residentially and industrially developed communities. Nonpoint source pollutants from stormwater runoff include gasoline, motor oil, and road salt on paved surfaces. Runoff from residential yard surfaces contains herbicides, pesticides, and fertilizers. Nonpoint pollutants flow into storm drains which in turn may affect water quality downstream.

Furthermore, construction sites contribute to stream pollution by erosion and sedimentation carried in runoff washing into storm drains. The runoff transports suspended solids and toxins that may harm organic and aquatic life in streams as well as polluting groundwater. Sediments can accumulate and clog

storm drains, and stream channels. Therefore, like any urbanized community, Bristol Township must plan for controlling water quality of stormwater runoff and including remediation to address stream maintenance and stormwater management systems.

Lakes and Ponds

Lakes and ponds, whether natural or manmade, moderate stream flows during storms and flood events and play an important role in oxygen and nitrogen cycles. These water bodies provide habitat for aquatic life as well as water sources for wildlife. These landscape features are scenic and recreational amenities.

There are several lakes and ponds in the township. The two largest are Silver Lake and Magnolia Lake, which are both part of the county's Silver Lake Park. Silver Lake is a manmade lake created in 1687 when a dam was placed on Otter Creek to provide power for the mills in Bristol Borough. Magnolia Lake, also manmade, was formed in 1953 from a gravel pit used for the construction of the Pennsylvania Turnpike. There are also several manmade ponds associated with the Rohm and Haas manufacturing facility.

The township regulates disturbances of the shorelines of lakes and ponds through the zoning ordinance. The shorelines of lakes, to a distance of 300 feet from the shorelines, are permitted to contain no more than 10 percent impervious surface and at least 70 percent shall remain undeveloped and unaltered. The shorelines of ponds, to a distance of 100 feet from the shorelines, are permitted to contain no more than 10 percent impervious surface and at least 80 percent shall remain undeveloped and unaltered. These regulations are consistent with other Bucks County municipalities and appear reasonable.

Floodplains

Floodplains are areas, which adjoin streams that accommodate floodwaters. They also contribute to the township's scenic beauty and to groundwater recharge. The natural vegetation associated with floodplains provides controls for soil erosion and sedimentation and provides for wildlife habitat and water quality improvement.

Historically, people have been attracted to waterways and their adjacent floodplains because of both their scenic beauty and use in commerce. This attraction has brought forth development in floodplains, which in turn has created flood hazards. Flooding is a natural occurrence for rivers and streams, but flooding becomes hazardous when people and property are introduced into the floodplain. According to the *Bucks County Hazard Mitigation Plan* (2005), 1,478 structures in the township are located in the 100-year floodplain.

The township regulates floodplain development through its zoning ordinance in Article XX Floodplain Regulations and Section 2102 Environmental Performance Standards. These regulations comply with the requirements of the National Flood Insurance Program (NFIP) for floodplain management and therefore make the township's homeowners, renters and business owners eligible to purchase federally backed flood insurance. As of May 31, 2007, 760 flood insurance policies are in effect in the township.

The NFIP also performs flood hazard mapping to provide the data for floodplain management and to actuarially rate new construction for flood insurance. The floodplain areas mapped and regulated by the NFIP in Bristol are located along the Delaware River, Neshaminy Creek and its tributaries, and Mill Creek which drains into the Neshaminy Creek (Map 2). The Flood Insurance Rate Maps (FIRMs) were last updated in May 1999.

Floodplain soils or alluvial soils indicate where flooding has occurred in the past and where floodwaters have deposited sediment. Sometimes these soils occur in areas that have not been mapped under the NFIP. However, areas where alluvial soils exist should be considered as part of the floodplain where the floodplain has not been mapped. The zoning ordinance currently requires that alluvial soils remain as permanent open space.

The NFIP offers the Community Rating System (CRS) to communities that go beyond the minimum NFIP requirements for floodplain management. Communities are rated on 18 creditable activities in these four categories: public information, mapping and regulations, flood damage reduction, and flood preparedness. Policyholders in communities that participate in the CRS are given discounted premium rates from 5 percent to 45 percent depending upon the number of credit points a community earns. Consideration should be given to participating in the Community Rating System.

Wetlands

Bristol Township contains wetlands along the river, surrounding lakes and ponds, upland marshes, and bogs (Map 2). The township also contains tidal wetlands along the Neshaminy Creek and Delaware River. Wetlands are often saturated lands or areas that display a seasonal high water table. Even in built-out and urbanized areas, wetlands are important because they help to improve water quality by filtering toxins, and they assist with groundwater recharge. They also serve as natural retention basins for stormwater. After storm events, the slow release of stormwater from wetlands helps to reduce the amount of flooding of surrounding areas. Furthermore, wetlands serve as wildlife habitat.

Wetlands are identified by one or more of the three following indicators: soil type, wetland vegetation, and hydrology, all of which are evidenced by soil saturation and drainage characteristics. The township has areas of wet and hydric soils, including Hatboro and Fallsington silt loams.

The township zoning ordinance currently requires that lakes, ponds, wetlands, and watercourses be left as permanent open space. Wetlands are also regulated by the U.S. Army Corps of Engineers and the Pennsylvania Department of Environmental Protection under the aegis of the Federal Clean Water Act and various state laws. The U.S. Army Corps of Engineers requires a permit to disturb wetlands greater than one acre in size. 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 Pennsylvania Department of Environmental Protection also regulates wetlands under Chapter 105 Rules and Regulations administered by the Bureau of Dams and Waterways Management.

Soils

Soils are important to the planning process because they impact the level of development that may occur on a given site and are critical elements of stormwater runoff management. Soil limitations need to be considered when construction is proposed in areas with wet soils, shallow water tables, or shallow depth to bedrock. Soils can remove pollutants for surface and groundwater and enhance groundwater infiltration. Poor soil management can contribute to erosion and sedimentation, nutrient loading and decreased quality and quantity of water.

Much of the original soil material in Bristol Township has been disturbed, filled over, and otherwise covered by urban structures. The township soils are now classified as Urban Land-West Brook Pits, which consist of nearly level, and gently sloping, well-drained land types and soils on terraces found along the

Coastal Plain. A small area west of Bristol Borough is classified as Urban Land Linden-Barbour which is a nearly level to sloping well-drained soil found on terraces and floodplains.

Sediment Pollution

One of the major components of water pollution is sediment, primarily eroded soil. The Bucks County Conservation District regulates erosion and sedimentation in accordance with Title 25 of the Pennsylvania Department of Environmental Protection (PaDEP) regulations. The township coordinates review of erosion and sedimentation control and requires that plans be submitted for land developments. The township subdivision and land development ordinance should require the implementation of erosion and sedimentation control principles such as protecting and enhancing natural vegetation, stabilizing disturbed soils, trapping sediment until stabilization of soils, and requiring the submission of grading plans.

Additionally, land clearing and topsoil removal over large areas should be discouraged, and site area disturbance should be limited in the township. The township subdivision and land development ordinance should identify minimum site area available for development, designate a maximum disturbance threshold, and encourage development in phases. The subdivision and land development ordinance should be amended to regulate land clearing and topsoil removal over large areas and limit permissible site area disturbance.

Woodlands

Approximately 19 percent (1,932 acres) of the township is covered by woodlands. Woodlands play an important role in maintaining natural systems. Benefits to the environment include water and air purification, regional and local climate control, erosion control, open space, and habitat for wildlife. Preservation of forests is also important to community aesthetics.

The Bristol Township Zoning Ordinance prohibits removal of more than 50 percent of forested land. If the forested area is located in the same area as another resource such as slopes or wetlands, the protection ratio rises to 80 percent. Standards are provided for tree removal as part of forestry operations. The subdivision and land development ordinance has tree protection standards that protect remaining trees during construction.

The subdivision and land development ordinance has no requirements for tree replacement. Consideration should be given to amending the subdivision and land development ordinance to require tree replacement for trees of a specified diameter that are removed or destroyed during any stage of development.

American Forests, a nonprofit conservation organization, recommends that large metropolitan areas in the northeast United States set a goal of 40 percent tree cover. As cited above, the township is covered by 19 percent woodlands. TreeVitalize is a program sponsored by the Pennsylvania Department of Conservation and Natural Resources and other public and private partners.¹ TreeVitalize, a partnership aimed at restoring tree cover in southeast Pennsylvania, provides plant materials, technical assistance, education, and funding. In 2005, Bristol Township received 150 trees through the TreeVitalize

¹ TreeVitalize has several programs (e.g., Neighborhoods, Watersheds, Tree Tenders, and Municipalities) available to assist municipalities with tree planting, education, and technical assistance. A goal of the TreeVitalize Neighborhoods program was to plant 6,000 trees within 40 neighborhoods in southeastern Pennsylvania between Fall 2004 and Fall 2007.

Neighborhoods program. In 2006, the township applied for additional trees from the TreeVitalize Neighborhoods program for the “weed and seed” program area of Bloomsdale, Fleetwing, and Venice-Ashby area but was unsuccessful due in part to an expansive project scope. The township is scheduled to receive 42 trees in fall of 2007 through the Coastal Zone Management (CZM) program for use in the “weed and seed” areas. A primary goal of the CZM program is to provide tree canopy for urbanized communities within their study area. There is an opportunity to work with the Bucks County Conservation District, which assists in the implementation of the TreeVitalize Watersheds program, which is aimed at riparian buffer planting along creeks and streams to protect and enhance water quality. Therefore, township officials should continue to work with organizations such as TreeVitalize and CZM to tailor a project that will increase tree cover in Bristol.

Air Quality

Bristol Township lies within the Philadelphia Metropolitan Statistical Area (MSA), characterized by the U.S. Environmental Protection Agency (EPA) as a moderate nonattainment area because of unacceptable levels of ozone, carbon monoxide, and particulate matter. The region is mandated to attain an acceptable standard by 2010. If attainment is not reached, the EPA can sanction the region and halt federal funding of transportation projects that add capacity to the existing highway network. In the event of a sanction, funding would still be available for safety programs and projects, public transit, construction or restriction of roads or lanes for the use of passenger buses or high-occupancy vehicles, programs that improve traffic flow to achieve new emission reduction, parking facilities serving multiple occupancy vehicle programs or transit operations, programs that limit or restrict vehicle use in downtown areas or other areas of emission concentration, programs that help manage nonrecurring congestion (i.e. breakdowns and accidents) to reduce congestion and emissions, and air quality improvement projects that would not encourage single-occupancy vehicle capacity.

Typical pollution experienced in the area may be attributed to regional industrial activity and motor vehicle emissions. Even though Bristol Township is an automobile-dependent suburb, future development should be planned in a way to reduce pollution and improve air quality. Reducing dependence on the personal automobile and encouraging alternative travel by foot or bicycle are means of reducing emissions. This can be done by facilitating public transit, encouraging mixed use, and providing pedestrian and bicycle trail networks. A further discussion of implementation measures is provided in the chapter on Transportation.

Resource Protection Measures

In addition to maintaining the protection of natural features through the current zoning and subdivision and land development ordinances and the above suggested amendments, as well as through stand-alone ordinances and other improvement projects, the township should address the following issues:

Riparian Buffer Requirements

Riparian buffer requirements protect floodplains, soils, and woodlands along streams and waterways and enhance stormwater management and water quality. Riparian buffer standards which prohibit clearing, grading, paving, and structures (except for essential utilities and access roads) within a certain setback from a stream provide an added degree of stream protection, particularly where floodplain mapping has not been done. The protection of natural vegetation is critical within a stream corridor. This vegetation stabilizes the stream bank, filters stormwater, helps slow stream velocities, preserves the floodplain, and provides wildlife habitat. In a developed area such as Bristol Township, a minimum width buffer along a

stream corridor can be established on private land, and landowners should be encouraged to let streamside vegetation grow or plant additional vegetation.

Environmental Advisory Council

Natural resource protection is an important issue in Bristol that must be dealt with effectively and knowledgeably. Pennsylvania Act 148 permits municipal governing bodies to establish environmental advisory councils (EAC) to advise local government agencies on matters dealing with protection, conservation, management, promotion, and use of natural resources. Among the duties of an EAC are to keep an index of all open space areas which include floodplains, woodlands, and other unique natural areas; identify environmental problems and recommend plans and programs for action; and promote a community environmental program. EACs can provide valuable assistance to the board of supervisors in solving problems and generating respect and appreciation of the natural heritage of the township. An EAC can deal strictly with environmental matters and be an effective tool to assist the supervisors.

The township's resource protection standards provide adequate protection of natural resources for new development but may not provide sufficient protection of natural resources where property owners are merely maintaining their properties. For example, property owners may clear streamside areas of vegetation unaware of the need for a riparian corridor. Thus, broader education on the benefits of protecting resource areas may be needed in addition to zoning requirements. An EAC may provide educational resources to homeowners and businesses about property maintenance.

Low Impact Development

Low-Impact Development (LID) is philosophy in site development and environmental protection that has been successfully integrated into many municipal ordinances throughout the country.

While the underlying principle and development strategy overlaps other planning concepts such as sustainable development, growing greener, and smart growth, LID is essentially a comprehensive land planning and design approach intended to protect and maintain water resources. LID is not a growth management program but rather focuses on maintaining and conserving natural systems and hydrologic functions on a site in order to reduce the need for future mitigation. This is accomplished by a combination of planning and design strategies that use conservation approaches and techniques to reduce site development impacts, often used in conjunction with best management practices (BMPs).

Specifically, LID development strategy aims to accomplish one or more of the following:

- Preserve open space and minimize land disturbance;
- Protect natural systems and processes (drainageways, vegetation, soils, environmentally sensitive areas);
- Reexamine the use and sizing of traditional site infrastructure (lots, streets, curbs, gutters, sidewalks) and customize site design to each site;
- Incorporate natural site elements (wetlands, stream corridors, mature forests) as design elements; and
- Decentralize and micromanage stormwater at its source.

The Pennsylvania Department of Environmental Protection PaDEP encourages LID practices in its model stormwater management ordinance and includes these practices in the state's best management

practices technical manual. Under ACT 167, which regulates stormwater management planning on a watershed basis, all current and future stormwater proposals will be encouraged to use these practices. Some of the techniques include preserving natural drainage features, protecting natural depression storage areas, avoiding the introduction of impervious surface areas, reducing the use of storm sewers, reducing street widths, using permeable paving materials, reducing building setbacks, and constructing cluster developments.

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 innovative ways to treat stormwater as close to the source as possible, such as providing biofiltration or infiltration areas, vegetated swales, or minimizing impervious surface areas altogether. 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 the zoning ordinance and subdivision and land development ordinance.

Summary of Recommended Actions

- Consider participation in the National Flood Insurance Program's Community Rating System to reduce flood insurance premiums for township homeowners, renters, and business owners.
- Amend the subdivision and land development ordinance to regulate land clearing and topsoil removal over large areas and limiting permissible site area disturbance.
- Amend the subdivision and land development ordinance to require replacement of trees that are removed or destroyed during any stage of development.
- Continue to work with organizations and programs such as TreeVitalize and the Coastal Zone Management to tailor a project that will increase tree cover in the community.
- Consider amending the zoning ordinance to add riparian buffer requirements.
- Consider the creation of an environmental advisory committee (EAC).
- Incorporate Low Impact Development (LID) techniques into the zoning ordinance and subdivision and land development ordinance.

CHAPTER 5

CULTURAL, ARCHITECTURAL, AND HISTORICAL RESOURCES

Well-kept historic buildings contribute to the character and vitality of a community and strengthen property values. Older structures are frequently better built with craftsmanship and materials rarely duplicated today. Historic structures represent a past investment for future generations.

According to the *Bristol Township Park and Recreation Plan* (1997 update) there has been a recent awareness in Bristol Township of the community's historic heritage and the need to interrelate historic preservation with park planning, open space preservation, and tourism.

Preserving historic and cultural resources in the township calls for addressing not only individual buildings and structures but also clusters of these buildings found in older settlements.

Description of Township Resources

Historic resources consist of buildings, objects, or sites that are national landmarks or eligible for listing or are listed in the National Register of Historic Places, as well as those identified as historic by the community on the basis of age or local importance. Bristol Township contains various cultural and historical resources of significance that provide insight into the local heritage as described below.

National Historic Landmark

National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. They form a common bond between all Americans. While there are many historic places across the nation, only a small number have meaning to all Americans. Today, fewer than 2,500 historic places bear this national distinction.

The National Park Service administers the National Historic Landmarks program for the Secretary of the Interior. It is a cooperative endeavor of government agencies, professionals, and independent organizations sharing knowledge with the Service and working jointly to identify and preserve National Historic Landmarks.

Once designated, the National Park Service commits to assist in the preservation of these irreplaceable properties through the National Historic Landmarks Assistance Initiative. The Assistance Initiative continually monitors the condition of National Historic Landmarks and sends a periodic report to Congress and others who are interested in the future of these properties. Legislators and officials use the report in planning for the protection of National Historic Landmarks. Owners use the report in seeking funding for repairs and in developing coalitions to protect their properties.

Owners of National Historic Landmarks may be able to obtain federal historic preservation funding, when funds are available. Federal investment tax credits for rehabilitation and other provisions may apply. A bronze plaque bearing the name of the National Historic Landmark and attesting to its national significance is presented to the owner upon request.

Delaware Canal State Park

Delaware Canal was designated as a National Historic Landmark on December 8, 1976. The Delaware Canal State Park (formerly know as the Delaware Division of the Pennsylvania Canal and later Roosevelt State Park) was one of the earliest large-scale transportation systems in the United States. Completed in 1832, the canal opened for commercial navigation the following year. Coal from the Pennsylvania anthracite mines was brought by canal barge to Bristol where it was transferred to ships bound for Philadelphia or New York. In addition, canal boats carried such items as limestone, iron ore, pig iron, staves, rails, hay, straw, lumber, and brick.



The Delaware Canal and towpath in Edgely.

For several decades, the canal has not functioned as a transportation corridor and portions of the canal have been paved over eliminating the continuous nature through portions of Bristol and Tullytown boroughs, and Falls and Bristol townships. In Bristol Township, the canal provides an invaluable park and recreational resource. As stated in the township's open space plan, the Delaware Canal State Park and its reuse as a restored linear park is a primary objective. (See Parks, Recreation, and Open Space Planning section for more details on linear park planning.)

In Tullytown Borough, municipal officials are working with the Pennsylvania Department of Conservation and Natural Resources—Bureau of State Parks to excavate and restore portions of the canal that were buried or paved over. Similarly, Bristol Township officials may wish to coordinate with State Parks to determine the feasibility of restoring strategic segments of the canal back to its original configuration and condition.

National Register Listed Sites

There is only one structure located in the township listed on the National Register of Historic Places, the Bolton Mansion. Unfortunately, another listed site contained a structure located at White Hall of Bristol College that has been razed.

Bolton Mansion

The Bolton Mansion is located on Holly Drive in the Holly Hill section of Levittown. It was constructed in 1687 for Phineas Pemberton, an early colonial public servant and associate of William Penn. The home is architecturally significant in that the home's four connected structures show the evolution of architectural styles in early southeast Pennsylvania. The property is owned and operated by the Friends of Bolton Mansion, Inc. whose mission is the preservation of the property. Social events and other meetings are now held at the mansion.

The *Bristol Township Park and Recreation Plan* (1997 update) suggests that the mansion has the potential to house a museum that could showcase the history of Bristol Township and the historic growth and development of Levittown. In cooperation with the Friends of Bolton Mansion, consideration should be given to commissioning a study of the feasibility of a museum at the mansion.

National Register Eligible Sites

According to PMHC, there are nine separate properties or sites that are eligible for the National Register which are: Sunbury Farm (1720), Burlington-Bristol Bridge (1931), Lawrence Johnson Property (1850), Edgar A. Smith House (1935), Shadyside (1780), Green Lane Railroad Viaduct (1931), Levittown Historic District, Newportville Historic District, and the Pennsylvania Railroad from Philadelphia to New York.

Newportville Historic District

Newportville occupies a terraced site on the east bank of the Neshaminy Creek at the tidewater head four miles from the Delaware River and retains the air of an early Pennsylvania mill and farming village.

The *Bristol Township Park and Recreation Plan 1997 Update* provided the following information on the remaining buildings in the Newportville Historic District. Significant buildings remaining include the first settler's early 18th century homestead, an 18th century store and landing, ten federal stone or frame buildings (houses and an inn) dating from 1801–1822 most of which were constructed by housewright George Ransom, an 1835 brick Federal dwelling, four small farmhouses dating to 1840, a high-style late Federal mansion (1848), a street of ten frame and brick Victorian mechanics' houses (1850), a Federal store expanded in 1860 into a Victorian commercial building, three Gothic Revival house built before 1876, a 19th century stable block, agricultural implements works, barns, sheds, and several bungalows built as vacation homes around 1925. Sites include a former mill race, log landing, and school house lot.

Preservation Tools and Techniques

The first step in protecting historic resources is to survey them. A comprehensive inventory or survey is the means of identifying and documenting the history of buildings, sites, and districts eligible to be classified and protected as historic resources. Lacking a historic inventory of Bristol Township to date, township officials are committed to having a comprehensive inventory conducted. This inventory should be updated periodically to reflect changes due to demolition, modification, deterioration, addition, or other changes.

A variety of tools exist to protect historic and cultural resources. Methods of historic resource protection include National Register designation and regulation by ordinance, whether through an Act 167 historic district, or through the zoning ordinance, or both. Ordinance provisions that aid in resource protection include historic district designation, use modifications, preservation incentives, exterior design guidelines for buildings that are built, rebuilt, or altered in historic areas, delay of demolition ordinances, and village preservation. Bristol Township currently employs several of these techniques, which are described below.

The National Register of Historic Places

Eligibility

Eligibility for inclusion on the National Register has no legal impact on the rights of property owners, provided that proposed uses or alterations do not involve a federal license, permit, or funding from a federal source. This designation does not provide protection from alteration, redevelopment, or demolition of historic structures unless there is some federal involvement in a proposed project. However, properties deemed eligible for the Register or included within the boundaries of a historic district so designated, may qualify for certain grants. For example, the Keystone Historic Preservation Grant Program provides funds to nonprofit organizations and local governments for capital improvements on

historic resources. Funding may also be available through the Pennsylvania History and Museum Grant Program. The Federal Historic Preservation Tax Incentives Program provides tax credits for the certified rehabilitation of income-producing certified historic structures. The efforts of residents and organizations that identify sites worthy of this designation should continue to be supported, and these people should be encouraged to apply for a determination of the eligibility of a site or district from the PHMC.

Listing

For an individual property or historic district to be listed on the National Register, an application must be made to the PHMC, which, if it nominates the property or district for listing, sends the nomination to the National Park Service for final approval. This application process can be quite involved and requires additional documentation beyond what is needed for determinations of eligibility. Note that support of residents is crucial for the historic district applications.

Listing, as with eligibility, places no restrictions on the actions of private landowners or developers but has the effect of alerting landowners to the significance of a resource. Listed districts can receive federal historic preservation funding, when available, and tax credits for rehabilitation. The area in which the resource is located receives recognition for having a historically important resource, and indirect benefits may accrue to both individual owners and the community through increased property values, potential tourism, and other economic development. Efforts of individuals and groups applying to place resources deemed eligible onto the Register should continue to be supported.

Criteria for Listing on the National Register

The National Park Service's standards for evaluating the significance of properties were developed to recognize the accomplishments of all peoples who have made a significant contribution to our country's history and heritage. The criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the National Register.

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>

Act 167 Historic District

Historic District Ordinance

Under Act 167 of 1961, the Historic District Act, municipalities can adopt a historic district ordinance and designate an area as a historic district. This ordinance is a method of regulating the appearance of places with historic resources by permitting the review of changes to the exterior portions of buildings and

structures. Historic districts designated under the provisions of Act 167 must be surveyed and documented, with all supporting materials submitted to the PHMC for certification of the district. Act 167 requires the establishment of a Historic Architectural Review Board (HARB), which reviews and advises the municipal governing body about any alterations within the district. The governing body then decides whether to approve or deny the proposal.

The level of regulation that a municipality may undertake under a historic district ordinance can vary from adopting provisions to control the demolition of historic buildings to governing in detail the alteration, repair, and maintenance of the external features of a historic structure. Historic district ordinances have the advantage of providing municipalities with a wider amount of control over the appearance and development of historic districts, but they can also be controversial because that very same control sometimes alarms residents who fear that such regulation will interfere with the use of their property and impose greater costs for renovations and repairs.

Districts created under Act 167, the Historic District Act, are not zoning districts. The Act 167 historic district review process is a procedure separate from zoning, and a historic district ordinance is enacted as a stand-alone ordinance, although it should be cross-referenced in the zoning ordinance. An evaluation should be conducted of the merits of establishing a historic district ordinance under Act 167 for the Cabin Run Valley Historic District and other areas, such as the Deep Run Valley.

Certified Local Government

Local governments that fulfill program standards administered by the PHMC can eventually receive designation as a Certified Local Government under the provisions of the National Historic Preservation Act. To participate in this program, municipalities need to meet certain other criteria, including effective enforcement of the historic district ordinance and compliance with appointment, training, and reporting requirements. Membership in this program allows municipalities to apply for grants under the Certified Local Government Grant Program. Such grants can be used for cultural resource surveys, technical planning and assistance, educational and interpretive programs, and other preservation activities. If a historic district ordinance is established under Act 167, consideration should be given to applying for Certified Local Government status.

Historic Marker Program

Historic resources can be commemorated with a marker through the Historical Marker Program of the PHMC. Any individual or group may nominate a structure or site for such a marker. If the independent panel designated by the PHMC approves the marker, the nominator must submit a grant application for half of the cost of the marker and designate a nonprofit organization to serve as a sponsor to cover the balance of the cost.

The PHMC staff helps nominators and sponsors with composing the text to be inscribed on the marker, finding a suitable location for it, and planning the dedication ceremony. The sponsor, however, is ultimately responsible for obtaining all necessary permissions to install and dedicate the marker. The PHMC owns and maintains the marker once it is installed.

Currently, there are historical markers through the Historical Marker Program of the PHMC already in place for the Delaware Canal State Park. However, consideration should be given to applying for additional historical markers to designate the some of the township's other significant properties and to

promote awareness of such resources. A local municipality can also institute its own historic marker program independent of the PMHC as a way to promote community pride and heritage awareness.

Act 247—Historic Preservation Zoning

Historic resources can also be protected through the zoning power granted municipalities by Act 247, the Pennsylvania Municipalities Planning Code (MPC). The MPC now requires local zoning ordinances to protect historic resources and allows special classifications and regulation for places of unique historic value. Historic zoning regulations can allow a municipality to regulate the uses that may be permitted in an area of historic properties or a historic district. They also can regulate other characteristics such as the density of development, the maximum sizes for buildings, and the setbacks from property lines.

Historic preservation zoning would permit different treatment of historic resources such as allowing additional uses and setting standards for rehabilitation, additions and change of use. Standards for rehabilitation, additions, and change of use standards tailored to historic buildings will control alterations to these structures while maintaining their character.

The provision of landscaping, streetscapes (street trees, lighting, paving details), sidewalks, speed limits, and convenient parking can help to protect village character and identity in an increasingly suburban environment. Additional ways to set villages apart is to set standards for signs, architectural improvements, property maintenance, and change in use such as conversions and adaptive reuse.

Currently, the township zoning ordinance provides protection of historic resources. Structures and resources that are deemed historic are required to be preserved unless the applicant can demonstrate that the resource is in irreparable condition. Development on sites with historic resources must be designed to preserve the historic character of the resource. The zoning ordinance also contains a special setback from the Delaware Canal State Park, depending on the adjacent land use. (For further discussion, see Parks, Recreation, and Open Space Planning chapter.) To enhance the current provisions, township officials should consider additional measures to protect their historic and cultural resources.

Use Modifications and Preservation Incentives

Use modifications, sometimes described as adaptive re-use, and preservation incentives are useful and effective approaches to protecting and encouraging use of historic structures that can be incorporated into the zoning ordinance. The historic resource provisions in Article XIV of the zoning ordinance currently permit uses such as residential conversion, library or museum, office, village-oriented shop, guest house, and crafts as permitted adaptive reuse of historic structures.

Preservation incentives selectively award bonuses for preserving historic structures and incorporating them into new development. One example is allowing a density bonus of one unit in a residential project if a preserved historic structure serves as the additional unit. Lot-averaging is a technique that allows a large lot for a historic building and smaller lots for new residential development. Incentives for preserving historic structures within nonresidential development might include bonus provisions for building coverage or impervious surface. The existing historic resource provisions in the zoning ordinance include density bonus provisions. Consideration should be given to including provisions for lot averaging to provide additional incentives for preservation of historic structures.

Design Guidelines

Design guidelines are another method of preserving the appearance of historic buildings and neighborhoods. They help to ensure that structures keep their historic character if they are rebuilt, restored, or renovated. The guidelines serve a similar purpose for new construction. They illustrate preferred design approaches to give builders and developers a sense of what the community is looking for. Guidelines may be attached to an Act 167 historic district ordinance or may be incorporated into the zoning ordinance.

A design guideline usually consists of a one- or two-sentence statement that describes a preferential treatment of one aspect of the design of a building or site. Such guidelines, especially when illustrated, can help maintain the character of the community. Design guidelines are also useful when coordinated with the requirements of a historic district. Residents easily recognize what is encouraged and what is discouraged in making design choices. Township officials may wish to consider developing design guidelines for the various historic settlements such as Newportville, Fergusonville, Edgely, and Croydon.

Control of Demolition

When a historic structure is threatened with demolition, a control of demolition provision in the zoning ordinance or elsewhere may allow it to be preserved or at least documented. This provision provides a waiting period before a demolition permit is issued, so that means of saving the structure can be considered. If it cannot be saved, the delay could afford the opportunity for salvaging noteworthy elements and documenting the structure and its history.

Section 2137 (Protection of Historic Resources) of the zoning ordinance requires applicants seeking a permit to demolish an identified historic resource¹ to provide a site plan and application with appropriate documentation. Where demolition is deemed to be acceptable, the redevelopment of the property shall be undertaken in a manner that preserves the character, front yard setback, and design of the building removed. New or reconstructed buildings must maintain the setback of the original building as well as the architectural style, scale, bulk, and design of the original building.

Summary of Recommended Actions

- Conduct a comprehensive survey of the township to identify resources of historical significance.
- Continue to support efforts of individuals and groups to identify sites worthy of eligibility on the National Register and efforts to place resources deemed eligible onto the Register.
- Consider the merits of establishing a historic district ordinance under the authority of Act 167.
- Consider applying for Certified Local Government status if a historic district ordinance is established under Act 167.
- Continue to control demolition of historic resources through the demolition provisions in the zoning ordinance.

¹ Historic structure or resources include any structure or resource that is: listed individually on the National Register of Historic Places (as identified by the Department of Interior), certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district determined by the Secretary to qualify as a registered historic district, or individually listed on the Bristol Township inventory of historic structures or resources. However, this inventory does not currently exist. One of the recommendations at the end of this chapter is to conduct a comprehensive historic survey of the township. Until this has been completed, the provision of Section 2137 pertaining to the township's inventory of historic structures and resources will not be applicable.

- Consider applying for historical markers through the Historical Marker Program of the PHMC or developing a local-based historic marker program to designate the township's significant resources.
- Coordinate with the Pennsylvania Department of Conservation and Natural Resources—Bureau of State Parks to determine the feasibility of restoring strategic segments of the Delaware Canal to its original configuration and condition.
- Adopt additional historic preservation zoning provisions to encourage preservation of historic buildings and to allow for additional use opportunities (e.g., buffer requirements, use regulations).
- Consider adopting historic district zoning to protect Newportville and Fergusonville areas by ensuring that new development is consistent with existing building placement and style.
- Consider adopting design guidelines for villages and special areas such as Newportville, Fergusonville, Edgely, and Croydon.
- Support the activities of the Friends of Bolton Mansion and consider the establishment of a museum dedicated to the history of Bristol Township and Levittown at the Bolton Mansion.
- Seek funding sources for historic resources in need of to rehabilitation.

CHAPTER 6

PARKS, RECREATION, AND OPEN SPACE PLANNING

Recreational activities relieve stress and enhance mental and physical fitness. Most people spend a significant portion of their recreation time close to where they live or work. Therefore the provision of community recreational facilities is recognized as an important function of local government. The most basic recreation provision of local government is parks. Open space allows us to be closer to nature and to escape from the built environment. Greenways serve to extend parks and open space and provide additional recreation and conservation opportunities.

Township Parks

The township contains numerous parks to provide for active or passive recreation. The park type designates its size, function, and in some cases, service area. The township's parks are shown in Table 6-1.

To determine whether or not public parks meet the needs of the township's residents, the township parks were compared with standards established by the National Recreation and Park Association (NRPA)¹ described below. These park and recreational facility standards serve as guidelines in determining adequate levels of service. The NRPA standards prescribe a range of area and facility characteristics for the various classifications of parks provided by municipal governments. Regional parks, such as Silver Lake and Neshaminy State parks are the responsibility of county and state governments, respectively.



Silver Lake County Park features various facilities including picnic and nature areas, boating, fishing, playgrounds, and ball fields for area residents.

- **Miniparks**—Miniparks are intended to address limited or isolated recreational needs, such as tot lots for small children. The service area is 1/4 mile or less. This park type is usually one acre or less and may be located on the same site as a neighborhood park. Approximately 0.25 to 0.5 (.375 average) acres should be provided as Miniparks per 1,000 residents. Examples of miniparks are Crabtree and Green Lynne.

¹The *Recreation, Park and Open Space Standards and Guidelines* (1983) published by the National Recreation and Park Association (NRPA) used in this plan have been superseded by *Park, Recreation, Open Space and Greenway Guidelines* (NRPA 1995). The new standards focus on community determined satisfactory mix of facilities. This reflects a national trend of communities that are responding to real time demand and latent demand rather than a national standard that does not apply to all communities. This is particularly true because of the trend in the last decade for the private sector to take a larger role in providing for recreation and leisure. The new standards require a comprehensive empirical analysis to determine a level of service that is beyond the scope of comprehensive plan. Therefore, the previous standards have been used. An updated township park and recreation plan should use the current 1995 NRPA standards to analyze need if possible.

**TABLE 6-1
Parks Facilities in Bristol Township**

Park Facilities	Acreeage	Park Type
Township-Owned		
Birch Valley Park	0.5	Minipark
Crabtree Park	0.5	Minipark
Neshaminy (Croydon Manor)	0.3	Minipark
Green Lynne Park	0.5	Minipark
Hanks (Spencer) Park	0.5	Minipark
Hilltop Park	0.3	Minipark
Kenwood Court Park	0.5	Minipark
Magnolia Park North	1.0	Minipark
Magnolia Park South	0.3	Minipark
Main St./Lenape Playground	1.1	Minipark
Oxford Valley Park	1.0	Minipark
Red Cedar Park	0.7	Minipark
Violet Wood Park	0.7	Minipark
Winder Village Park	0.5	Minipark
Bloomsdale Park	2.3	Neighborhood
Croydon Park	2.7	Neighborhood
Croydon Acres	2.5	Neighborhood
Firemen & EMT Park	4.0	Neighborhood
Green Lawn (Murphy) Park	4.6	Neighborhood
Hazel Park	2.6	Neighborhood
Policeman's Park	3.95	Neighborhood
John F. Kennedy Park	3.6	Neighborhood
Orangewood Park	4.4	Neighborhood
Pacific Park	2.1	Neighborhood
Municipal Campus	11.6	Special Use
Riverside Park	2.0	Special Use
Veterans Park	7.0	Special Use
Overlook Park	16.8	Undeveloped
River Road Park	1.0	Undeveloped
Mill Creek Falls Park	50.39	Linear
TOTAL	129.7	

Park Facilities	Acreeage	Park Type
State-Owned		
Neshaminy State Park	75	Regional
Delaware Canal State Park	16	Special Use
TOTAL	91.0	
School District-Owned		
Jefferson Park	1.0	Minipark
Edgely Park	8.6	Neighborhood
Harry S. Truman High	12.0	School
Benjamin Franklin Middle	10.0	School
F.D. Roosevelt Middle	11.5	School
Neil Armstrong Middle	10.0	School
Abraham Lincoln Elementary	3.0	School
Clara Barton Elementary	3.5	School
George Washington Elementary	3.5	School
James Buchanan Elementary	4.5	School
John Fitch Elementary	2.5	School
Lafayette Elementary	20.6	School
Maple Shade Elementary	1.5	School
Mary W. Devine Elementary	3.5	School
Ralph Waldo Emerson Elementary	3.0	School
TOTAL	98.7	
County-Owned		
Humphrey Park	3	Neighborhood
Magnolia Lake Park	28	Neighborhood
Black Ditch Park	80	Community
Delhaas Woods	175	Community
Queen Anne Park	159	Regional
Silver Lake Park	393	Regional
TOTAL	838	
Privately-Owned		
Municipal Campus (PECO)	12.9	
TOTAL	12.9	
GRAND TOTAL	1,170.3	

- **Neighborhood Parks**—A neighborhood park is an area for active recreational activities such as field and court games. The service radius is 1/4 to 1/2 mile. The ideal size for this park is 7 to 10 acres. Approximately 1 to 2 (1.5 average) acres should be provided per 1,000 residents. Edgely Park and Hazel Park are examples of this park type.
- **Community Parks**—A community park serves a group of neighborhoods with a service radius of one to two miles. Active recreational facilities such as courts and playfields are found in this park type as well as natural areas for passive recreation. The minimum recommended size for this park type is 25 acres. Approximately 5 to 8 (6.5 average) acres should be provided as community parks per 1,000 residents. Black Ditch and Queen Anne parks are examples of this park type.

- **School Parks**—(Provided by a school district) School parks allow for expanding the recreational, social, and educational opportunities available to the community in an efficient and cost effective manner. They complement other public parks and may serve as neighborhood or community parks. Athletic fields, should be geared towards active recreation for youth programs. Attempts should be made to integrate the school park site with the municipal park and recreation system. There are 13 school parks in Bristol Township.
- **Special Use Parks**—A special use park is generally an area of single purpose recreational activity which contains a significant feature or resource of interest or important to the public such as historic and archeological sites. There are no recommended standards for this park type because of the individual nature of the feature or resource. Delaware Canal State park and the township Municipal Campus are examples of Special use parks.
- **Regional Parks**—Regional parks are relatively large tracts of public open space (200+ acres) that serve areas within one half hour drive time. They often contain unique or diverse natural areas as well as active recreation areas. Due to their regional significance they are usually provided by state or county government. The portion of Neshaminy State Park in Bristol Township is a regional park.



George Washington Elementary School in Levittown is a school park.

Generally the township should provide land for recreation which fits the categories listed above. The National Park and Recreation Association (NRPA) guidelines suggest that 6 to 10 acres of parkland be provided per thousand residents. The current level of service provided by public parks in Bristol Township is approximately 6.0 acres per thousand residents (55,521 in 2000). There are 0.14 acres per thousand of miniparks, 1.0 acres per thousand of neighborhood parks and 4.6 acres per thousand of community parks.

The township parks are distributed throughout the township, and it appears that most neighborhoods are served. The larger parks are located in the center of the township. Miniparks are lacking for special groups such as young children and the elderly. These facilities may be provided within larger parks if they do not exist already. While the figures for miniparks and community parks are lower than recommended, the school district facilities should be evaluated to determine how they may augment township park recreational opportunities. Consideration should also be given to coordinating park planning with Bucks County to provide the appropriate facilities on county park land.

Bucks County, who owns the Thiokol site at Falls and Woodbourne Roads, are in the early planning phases of developing organized recreational facilities on this site, which if implemented, would provide additional recreational opportunities in this area.

Bristol has several parks which are owned by outside organizations such as the county and PECO. The township maintains these parks at its own expense. The township should explore the notion of sharing the costs of maintenance of these parks with the owners of the land to lessen the expense for the township.

Park and Recreation Planning

The *Bristol Township Parks, Recreation and Open Space Plan 1997—Update* identifies park and recreation needs for the township, as well as opportunities for preservation of open space. This plan is a functional component of the township comprehensive plan. Therefore, only a summary is presented here. The following goals guide the plan:

- Use the park plan creatively as a plan for parks and recreation and as an economic development tool.
- Realize that tourism is a one of the Commonwealth largest employers and relate that fact to the historic and recreational heritage of the township.
- Recognize the historic importance of Bristol Township and preserve and conserve existing developed park facilities and actively use green spaces.
- Recognize that the township has a significant amount of open space and parks and recognize that it may be worthwhile to delete properties that cannot be feasibly developed but target improvements at locations used by residents.
- Adapt existing neighborhood parks to meet needs of changing population.
- Acknowledge cost of maintaining expensive facilities is not in the best interest of township and recognize desire for more cost effective multipurpose facilities.
- Increase recreational opportunities along the Delaware River and Neshaminy Creek.
- Respond to recreational concerns and needs of township residents
- Provide expanded or new recreation facilities in areas where none exist or facilities are inadequate.
- Meet the needs of residents for recreational, historic heritage, cultural, and educational program and activities.

The plan lists the following principal project recommendations to implement the plan goals.

- Develop an active and passive park along the Neshaminy Creek. *(Accomplished)*
- Acquire the Edgely Park facility from the school district and upgrade the park. *(Accomplished)*
- Acquire the Indian Creek swimming pool site. *(Accomplished)*
- Study acquisition of Sabatini property for stormwater management flood control and open space. *(Accomplished without township money.)*
- Continue to improve the Township Municipal Complex. *(The township has made improvements to the municipal campus by adding a monument and lighting to the small memorial park including the War Dog memorial in the front of the township building.)*

The following have not been accomplished and township officials will continue to pursue these recommendations:

- Encourage development of commercial recreation facilities with the development of the I-95 and Pennsylvania Turnpike interchange.
- Encourage the Commonwealth to make additional improvements to the Neshaminy State Marina Complex.

The 1997 *Bristol Township Park and Recreation Plan* also provided a summary of the issues faced at the time. The plan focused on park and recreation issues as well as economic development. The plan's intent was to not only preserve, adjust, and enhance the townships park and open space inventory but

also to encourage the economic growth needed by a community with a disproportionately high portion of its tax base being residential uses and a very small proportion of its tax base supported by commercial industrial and office uses. The following issues also remain timely for this comprehensive plan update:

The Economy—The township wishes to recognize and is determined to resolve problems associated with a lack of economic development and the need to expand the economic base.

The Cost of Government—This cost has risen over time and presented a severe burden on taxpayers. Educational costs have risen, but taxing limits have been reached and total assessments have diminished.

Interstate 95/Pennsylvania Turnpike Interchange—The construction of this interchange is expected to be a significant milestone for the economic development and empowerment base of the township.

Flooding—Croydon and the central area of the township have faced serious flooding. Officials believe that existing open space can be designed and implemented in a flexible manner to allow for open space use and creating significant stormwater impoundment areas.

Historic Heritage—There are important resources in Newportville and Fergusonville as well as the Bolton Mansion that should be preserved to promote tourism.

Untapped Resources to be used for Economic, Physical, and Social Solutions—Several facilities including Green Trees Park and Butler Avenue Park should be deleted from the parks inventory, and land in the floodplain along Neshaminy Creek should be acquired.

Maintenance and Coordination of Facilities

The township has a variety of park and recreation facilities, but it may be necessary to enhance these facilities to better meet the needs of residents. Vandalism and littering within parks undermine their attractiveness and safety, and several township parks have experienced these detrimental activities. Township officials will continue to identify appropriate means to reduce or eliminate vandalism and littering, such as increased police surveillance or an adopt-a-park program. Budgeting for the ongoing upkeep and maintenance of aging recreational facilities is essential to protect the health and safety of park users. Township officials should consider potential funding sources to supplement the township's budget for this purpose.

There are also opportunities to coordinate with other organizations to improve facilities to benefit residents and visitors. For instance, school district currently permits the use of their facilities after hours, which helps to supplement resident's park and recreational needs. This Plan recommends that steps be taken to enhance the maintenance and coordination of park and recreation facilities.

Open Space Planning

The *Bristol Township Municipal Open Space Plan* was completed in 2000 to meet the requirements of the Bucks County Open Space program for funding. The following actions are completed or in progress:

- The township used county funds to purchase the Edgely School property (6.6 acres) from the school district and its own funds to purchase the Coates Avenue Community Center. The school is being renovated for community use and the school property will continue to be used as a neighborhood park.

- In July 2005, the township acquired three parcels (35.5 acres) including a 17-acre portion of the Rohm and Haas Woods site as part of the Bucks County Municipal Open Space Program. These parcels are intended to be preserved for open space. (No park or recreational facilities are planned at this time.)
- The purchase of a 3-acre parcel on Coates Avenue is finalized. The site was previously used for an industrial use and abuts the Edgely school site.
- The township is also interested in acquiring a portion of a site known as the Port of Edgely. The site contains a well and several industrial uses. An undeveloped portion of the site is heavily wooded and lies within the 100-year floodplain.

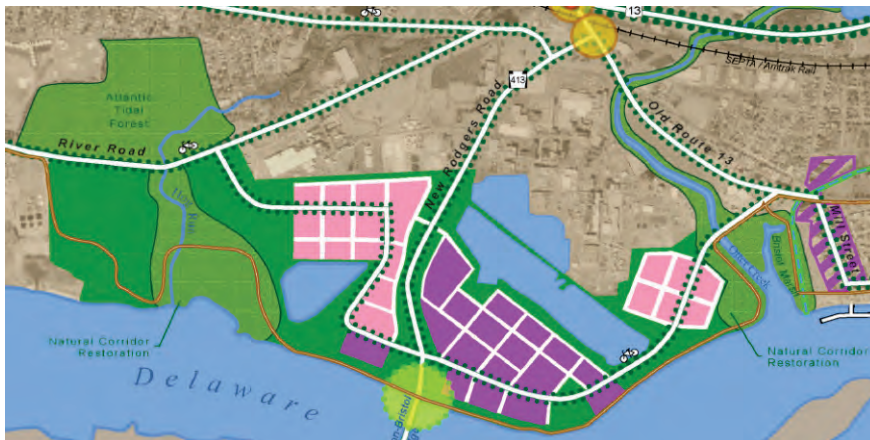
Other Township-Owned Open Space

In addition to the inventory of park and recreational lands previously discussed, the township owns two open space parcels. In the Freedom Neighborhood I development on Marie Loe Drive, the township owns and operates a community center and will continue this function in the future. The other parcel is located in the Oaktree section of the township. The site contained ten residential homes that were demolished. Due to flooding issues, the township will preserve this land as permanent open space.

Waterfront Revitalization Plan

The *Bucks County Waterfront Revitalization Plan* (2005) is intended to provide a vision for the entire lower Bucks County Delaware River waterfront. It provides a framework for the enhancement of the riverfront and adjacent areas. A recommendation of the plan is for all municipalities within the study area to seize the opportunity to create continuous public access along as much of the Delaware River as possible. Where possible, reinforcement of the public nature of the river should be provided by establishing a strip of land along the river's edge as a public linear park. For every redevelopment on waterfront property, each jurisdiction should set a "condition of approval" dedicating a public riverwalk along the entire river's frontage of the property. Figure 6-1 identifies a conceptual alignment of the riverwalk in Bristol Township, which proceeds into Bristol Borough to the northeast and Bensalem Township to the southwest. The actual location of the riverwalk (shown in orange) may vary based upon site specific opportunities and constraints, such as the site plan layout that is ultimately decided upon for the Rohm and Haas property.

FIGURE 6-1
Bristol Township Opportunity Area (Rohm & Haas Property)



Source: *Bucks County Waterfront Revitalization Plan* (2005)

Greenways

Greenways are open space corridors that are protected and managed for conservation and recreation purposes. They serve to extend parks and open space areas in a linear fashion to maximize visual and physical contact for park users. Greenways can be developed for trail-based activities involving hiking, jogging, and bicycling. Greenways provide ecological benefits such as promoting wildlife and plant diversity and maintaining the natural character of an area. By enhancing the quality of life and increasing surrounding property values, greenways are assets to communities.

A number of areas in Bristol Township serve as greenways already. These areas are made of protected wetlands and floodplains along stream corridors such as the Neshaminy Creek and its tributaries. The areas are often forested, which enhances their aesthetic and resource value. While these resources are protected by natural resource protection standards, public access is not always available because they may lie on private property. The township has the following natural corridors which serve as greenways:

Neshaminy Creek	Mill Creek
Black Ditch Creek	Queen Anne Creek

In 2003, the township completed a study for the development of a trail system throughout the Black Ditch Corridor. This study and the development of a trail system are also recommended in the *Municipal Open Space Plan of Bristol Township*.

Delaware Canal State Park

The Delaware Canal is a manmade greenway in the eastern portion of the township. The canal was built in the 1830s to transport coal from the coal mines in northeastern Pennsylvania to Philadelphia but has been filled in and paved over in portions of the township.

The canal is controlled by the Commonwealth Department of Conservation and Natural Resources and is designated a Registered National Historic Landmark. The canal is protected open space but it is important to consider adjacent lands to ensure the value of the canal itself and enhancing other opportunities for recreation. The township open space plan recommends that strategic parcels adjacent to the canal be acquired for passive recreation and interpretive value. The plan recommends that a concept be prepared and specific sites be identified for acquisition. Bristol Borough is proposing to establish trail facilities such as a parking lot, restrooms, interpretive signage, and additional open space at the border area between Bristol borough and the township.

Section 2124.B (Special Setback from the Delaware Canal State Park) of the zoning ordinance requires a minimum setback of 150 feet for industrial uses and 100 feet for all other uses is required along both sides of the Delaware Canal State Park.

Appendix B of the zoning ordinance, Special Zoning Provisions for Areas Adjoining the Delaware Canal, has the purpose of preserving and enhancing the character of the canal's recreational, environmental, historical, and scenic qualities and to ensure public access and compatible land uses along the canal. The section establishes goals for the canal enhancement area and specifies special standards for uses, signs, buffers, tree preservation, and bicycle and pedestrian access. However, the provisions of this appendix may not have legal enforcement, since there is no cross reference in the body of the ordinance. Furthermore, Section 2124.B (Special Setback from the Delaware Canal State Park) is not entirely

consistent with Appendix B's recommended setbacks. Furthermore, Appendix B is much more comprehensive in its suggested regulations. To provide a connection, consideration should be given to formally incorporate all requirements recommended in Appendix B into the zoning ordinance.

Bristol Borough has a linear park developed along the right of way of a former Conrail line. The Spurline Park extends from the center of the borough to the northern boundary and provides for walking and cycling. This rail-to-trails facility extends for 2 miles. The Spurline Park will be connected along Railroad Avenue to open space along the Delaware Riverfront at the Delaware North Riverfront Redevelopment area. A connection to Spurline Park from Bristol Township would provide opportunities for walking to the Bristol downtown and waterfront areas by way of Radcliffe Street.

East Coast Greenway

The East Coast Greenway (ECG) is proposed through Bristol Township along the Delaware Canal east of Bristol and in the southwest along the river through the Neshaminy State Park. This greenway is planned to be the nation's first long distance urban trail system for hiker's, cyclists, and other nonmotorized users. The ECG will serve as a spine route linking with other long distance trails and with local trails. It will run from Maine to Florida and will incorporate park paths, canal towpaths, waterfront esplanades, and highway corridors. The aim of the ECG is to eventually have the greenway 100 percent off road.

The township should coordinate action on creation of a route through the township that is coordinated with adjoining townships and the borough. The Delaware Canal State Park is an ideal route through the southeastern portion of the township.

Heritage Corridor Trail

Delaware River Heritage Trail will be a loop trail between Morrisville/Trenton to the north, and Palmyra/Philadelphia to the south. The intent of the trail is to reconnect with the river and turn underutilized or undeveloped industrial lands into an attractive riverfront trail. The trail is planned to pass through Bristol Township along the Delaware Canal and Rohm & Haas properties then along State Road. Planning is being provided by the National Park Service, so the township should coordinate with them for the implementation of this trail.

Utility and Transportation Corridors

Corridors serving utilities and roadways traverse Bristol Township. Only some of these corridors may be used as greenways they may serve as crossings and connectors where practical. PECO Energy Company has several overhead electrical line corridors which cross significant distances in the township and may facilitate connections between open space areas. Road corridors are not greenways by themselves because they are developed but they may serve as connectors between greenway or park/open space resources. The township should determine if PECO corridors are appropriate for greenways and coordinate with PECO to provide public access.

In addition to the existing and proposed greenways and trails additional open space links and pedestrian access between significant activity centers in the township should be planned. Public access can be secured by simple acquisition by the township or by purchasing rights to access via an easement. The need to acquire land or easements to provide public access along particular corridors can be evaluated and ranked based on the following criteria: (1) accessibility to/from neighborhoods and activity centers

and (2) suitability for pedestrian access or open space protection. The existing natural greenways should be surveyed and evaluated to determine if enhancement is necessary.

Summary of Recommended Actions

- Implement pertinent recommendations of the 1997 *Bristol Township Park, Recreation, and Open Space Plan* and update if necessary.
- Continue to identify appropriate means to reduce or eliminate littering and vandalism of park and recreational facilities such as increased police surveillance or an adopt-a-park program.
- Provide ongoing upkeep and maintenance of aging recreational facilities and to protect the health and safety of park users. Consider potential funding sources to supplement the township's budget for this purpose.
- Continue to promote cooperative use of school district facilities after hours to supplement resident's park and recreational needs.
- Establish greenway linear parks with trails along stream corridors and the Delaware Canal where possible.
- Facilitate planning efforts for the East Coast Greenway and the Delaware River Heritage Trail.
- Work with developers to create continuous public access along the Delaware River. Where possible, reinforcement of the public nature of the river should be provided by establishing a strip of land along the river's edge as a public linear park. For every redevelopment on waterfront property, each jurisdiction should set a "condition of approval" dedicating a public riverwalk along the entire river's frontage of the property.
- Coordinate planning with Bucks County to meet township park and recreation needs.
- Evaluate existing school facilities to determine if they can meet needs for miniparks and community parks.
- Determine if PECO corridors are appropriate for greenways and coordinate with PECO to provide public access.
- Revise the zoning ordinance to incorporate the requirements of Appendix B (Special Zoning Provisions for Areas Adjoining the Delaware Canal) of the zoning ordinance and further define the limits of the overlay district by reference. In order to eliminate inconsistencies and redundancies, the deletion of Section 2124.B (Special Setback from the Delaware Canal State Park) of the zoning ordinance maybe necessary.
- Survey and evaluate existing natural greenways to determine if enhancement is necessary.

CHAPTER 7

COMMUNITY FACILITIES AND SERVICES

Land use planning and community facilities and services planning should be closely interrelated. Appropriate planning for community services and facilities is essential to ensure that they are adequate within budget.

Community services and facilities are necessary to maintain the health, safety and social needs of communities and are important factors that can either enhance or detract from the quality of life in a community. They are provided by a range of public, private, and nonprofit agencies. Land use planning in Bristol Township should take into account the current state and future needs of such organizations, even though they may not be under municipal control.

This chapter will analyze the adequacy of existing and projected community facilities and services. A more detailed study of each service or facility should be undertaken if the township determines that extensions, expansions, or other major changes to facilities or service levels may be needed or desirable. In any study of this sort, the land use implications of such changes and their consistency with the adopted goals included in this comprehensive plan should be analyzed.

These community facilities and services are covered in this chapter:

- Emergency Services
 - Police Protection
 - Fire Marshal / Emergency Management
 - Emergency Medical Service
- Health Care
- Educational Facilities
 - Public School District
 - Technical School
 - Nonpublic Schools
 - College Facilities
- Libraries
- Municipal Administration
- Public Works
- Solid Waste Management

Emergency Services

Police Protection

The Bristol Township Police Department is located in the Bristol Township Municipal Building at 2501 Bath Road. As part of the department, there are also seven jail cells located in the building.

The township police department was established in 1948 with one police officer. Since that time, the department has grown to over 70 police officers to serve the township. As of August 2007, there were 71

officers, with plans to bring that number up to 80 with additional hires at the end of the year. The department has 50 police vehicles and several specialized vans and equipment trailers.

A majority of the calls received by the department relate to traffic incidents, thefts, and domestic disturbances. Areas of the township that tend to experience a higher number of accidents are generally along wide, open highways with no physical dividers. Whole stretches along the Route 13 corridor and areas along New Falls Road fall into this category. Police officers are required to investigate accidents that occur within the township and conduct accident reconstruction reports.

Department staff members are also involved in programs geared toward crime prevention and public safety. One such program is the federal Weed and Seed program designed to address crime in specific neighborhoods. Along with neighborhood residents and other government and agency officials, police personnel have played an active part on the Bristol Township Weed and Seed Steering Committee and have been working closely with neighborhood residents to reduce crime and improve safety in these areas.

According to Police Chief Jim McAndrew, current departmental needs are primarily for additional manpower and additional space. As the number of police personnel has increased, the department has been faced with space constraints and must double-up the use of or share some facilities, such as police lockers. Federal and state mandates have placed new emphasis on issues such as Homeland Security, minimum manpower requirements, and requirements to attend all court dates. Many of the mandates require additional training and funding for the training.

Projected needs over the next 5 to 10 years include increased funding, manpower and equipment, and space. Within this time frame, the police chief anticipates a need for a police staff of 90 officers and a fleet of approximately 60 police vehicles to adequately serve the township. Equipment needs would include additional uniforms, bullet-proof vests, holsters, firearms, and bullets.

Recommendations for Action—Police Protection

- Inventory space needs.
- Prepare an assessment related to staffing and equipment needs and develop a timeframe for meeting such needs.
- Investigate opportunities to obtain additional funding, such as government grants.

Fire Marshal/Emergency Management

The township fire marshal's office is housed at the township administration building on Bath Road. Unlike most communities in Bucks County, Bristol Township has a full time fire marshal/emergency management director (EMD) and eight full-time fire inspectors. The Fire Marshal's Office is responsible for enforcing the laws, ordinances, rules, and regulations of the township as they would pertain to fire safety in the interest of the health, safety, and welfare of the community. In an attempt to accomplish this task this office provides a Fire Safety and Inspection program for commercial and industrial businesses as well as schools and nonprofit organizations.

The fire marshal/emergency management director is also responsible for investigating the origin and cause of significant fires, and works closely with the police department in conducting investigations into suspected crimes relating to fires and explosives.

The fire marshal/emergency management director serves as a liaison between the township fire companies, rescue squads, and municipal government.

During times of emergency the Fire Marshal's Office works to coordinate emergency management operations with the township fire companies, rescue squads, and other organizations such as the American Red Cross, the Bucks County Emergency Management Agency, the Pennsylvania Emergency Management Agency, and the Federal Emergency Management Agency.

The fire inspectors play a dual role in promoting fire safety throughout the township: they are both inspectors and fire fighters. As inspectors, their responsibilities include fire code enforcement, and performing fire inspections. As firefighters, they carry their own fire gear and respond townshipwide to support the various fire companies when needed.

The growth of this office to eight paid full-time inspectors has been a fairly recent development. At the request of the fire companies several years ago, the township applied for and received a grant to get paid full-time personnel during the day, a time when many fire company volunteers are at work and unable to provide assistance.

Fire Protection

There are five fire companies which operate six fire stations in the township, all are staffed and operated by volunteers. Table 7-1 lists the fire companies and their locations.

**TABLE 7-1
Volunteer Fire Companies Serving Bristol Township, 2008**

Name of Company	Address
Croydon Fire Company (Station 11)	911 State Road, Croydon
Edgely Fire Company (Station 10)	1200 Edgely Avenue, Levittown
Levittown Fire Company #2 (Station 13)	6 County Way, Levittown
Newportville Fire Company (Station 12)	2425 New Falls Road, Newportville
Newportville Fire Company (Station 82)	3025 Bath Road, Bristol
Third District Fire Company (Station 14)	1141 Harrison Avenue, Bristol

The Croydon Fire Company is comprised of 50 volunteers and operates the following apparatus: 2005 E-One 75 foot aerial/pumper w/2000 GPM pump, 2002 E-One 2000 GPM pumper, 1986 Mack 1000 GPM pumper, 2000 Ford brush truck.

The Edgely Fire Company is composed of 22 members and operates the following apparatus: 2005 Ford 550 with Swab custom body rescue truck, 1999-E-One rescue truck, 2001 E-One 100 foot aerial truck, 2006 Pierce 1500 GPM pumper, 2008 Zodiac 14 feet watercraft, 2008 Ford Expedition Chief's vehicle, and a 2003 Crown Victoria deputy chief's vehicle.

The Levittown Fire Company # 2 is composed of 40 volunteers and operates the following apparatus: 2007 HME 1000 GPM pumper, 1990 Seagrave 1250 GPM 55 foot telesquirt, 1986 Seagrave 1000 GPM pumper, 1997 E-One special service truck.

The Newportville Fire Company is composed of 67 volunteers and operates out of two stations, Station 12 and 82. Station 12 houses a 2007 HME/Ferrara 2000 GPM Pumper, 2001 HME/Kenco Heavy Rescue, and a 1945 Mack 500 GPM Pumper, which is used as a parade piece. Station 82 houses a 2006 HME/Ferrara 1250 GPM Pumper and a 1981 Ford/E-One 1000 GPM Pumper.



The Third District Fire Company is comprised of 50 volunteers and operates the following apparatus: 2007 Seagrave 2000 GPM Pumper, 1997 LTI Model LT75MM Tower Ladder, 1969 M35A2 field truck, 2004 Ford Utility truck, and a 1972 Tower-ladder (reserve).

The Insurance Service Office, a national insurance industry group, recommends that suburban communities be within 2.5 miles of a fire station with a first-response engine. A first-response engine answers the first alarm and provides fire protection. All areas of Bristol Township lie within the recommended maximum distance from a first-response station.

According to the township fire marshal, having adequate manpower and finances are the biggest needs of the fire companies. Fewer new volunteers willing to undergo extensive training, combined with family and work obligations leave squads with fewer personnel. Regarding finances, two mills of the township's total tax of 19.6125 mills goes to the Fire Protection Fund. From this fund, each fire company gets a tax allotment which is divided equally across the township. The remaining money needed for each fire company must be raised by volunteer fundraising.

Summary of Recommended Actions—Fire Protection

- Assist local fire companies in volunteer recruitment efforts to meet staffing needs.
- Assist local fire companies with the financial challenges and needs they face.

Emergency Medical Service

There are two forms of emergency medical services—basic life support (BLS) and advanced life support (ALS). Basic life support can include first aid and basic pre-hospital patient care and transport. Advanced life support service includes enhanced prehospital care consisting of adjunctive equipment, administration of medication and fluids, and condition stabilizing treatment.

Emergency medical services within the township are provided by the Bucks County Rescue Squad (Medic 143) and the Levittown-Fairless Hills Rescue Squad (Medic 154). The township is fortunate in that each squad has both BLS and ALS capabilities. In addition, several of the local fire companies are recognized

as having Quick Response Service (QRS) capabilities that provide additional emergency medical service within the community and surrounding areas.

Housed at 143 King Street, next to the Lower Bucks Hospital within the township, the Bucks County Rescue Squad (Squad 143) was the first rescue squad established in Bucks County. This squad services all of Bristol Borough and about half of Bristol Township, covering primarily those areas of the township south of the Pennsylvania Turnpike. The squad answers approximately 3,500 calls per year, the majority of which are medical emergencies. While at least one paramedic is on duty 24 hours a day, seven days a week, two paramedics are on duty about 96 percent of the time. From 7 A.M. to 5 P.M., Monday through Friday, the squad operates two ALS units, and has the capability to dispatch a third ALS unit utilizing office personnel. The squad works with four emergency medical physicians, of which at least one is at the squad building three to four days per week, while the others are on call and/or respond to calls when their assistance is needed.

In addition to three ALS ambulances and an ALS responder, the Bucks County Rescue Squad also has a BLS and ALS Bicycle Team, which enables paramedics and emergency medical technicians to utilize mountain bikes equipped with life saving equipment. Deployment of the bicycle teams occurs in situations where they can reach people faster than vehicles can, such as wooded areas, and among crowds of people. The rescue squad is also a host agency for the Bucks County Rescue Task Force and, as part of FEMA's Federal Response program, they store the eastern division of the Pennsylvania Task Force Medical Cache. Their building is relatively new—less than 10 years old—and other than funding, there are no current or projected needs over the next 5 to 10 years.

The Levittown-Fairless Hills Rescue Squad operates from two squad locations: their main station (Squad 154) is located within the township at 7405 New Falls Road, and their Falls Township Station (Squad 155) is located at 48 Makefield Road in neighboring Falls Township. Their primary response area encompasses portions of five municipalities which includes about half of Bristol Township, generally those areas in the township north of the Pennsylvania Turnpike.

This rescue squad consists of both paid and volunteer members that provide 24-hour, seven-days-a-week advanced life support coverage from both stations. At a minimum, they have one ALS, which includes one paramedic and one emergency medical technician, ready to respond at all times. However, to comply with their ALS license, they operate two ALS from 8 A.M. to 6 P.M., Monday through Friday. With both their main station and Falls Township station combined, the Levittown Fairless Hills Rescue Squad answered approximately 5,900 calls in 2006.

In addition to answering emergency calls, the squad provides education to the public through their Community Outreach, Relations, and Education program (C.O.R.E.), provides Tactical Emergency Medical Service (TEMS) paramedics to the South Central Emergency Response Team, provides medical support to the Bucks County Technical Rescue Task Force, and jointly operates the only Emergency Incident Rehabilitation Unit in Bucks County.

As with other emergency service providers, continued financial support is a constant need. Currently there are no staffing, equipment, or facility needs, other than the reconfiguration of internal space as the need arises. The squad will be assessing what their needs over the next 5 to 10 years will be. There is a possibility that some building expansions may be necessary in the future.

Both rescue squads identified funding as a continuing need for their operations and the possibility of building expansions in the next 10 years. Continued support should be given to the rescue squads and efforts should be made to remain aware of their needs.

Summary of Recommended Actions—Emergency Medical Service

- Coordinate with emergency medical service providers and county officials to ensure community needs are met in the most efficient manner possible.
- Investigate ways to provide additional funding and insurance assistance to the emergency rescue squads.

Health Care

Located in both Bristol Township and Bristol Borough, the Lower Bucks Hospital campus is the only large medical facility within the township. Founded in 1954, during a time of intense growth within the region, the 190-bed facility has capabilities in emergency, surgical, and medical treatment. With over 400 affiliated physicians and over 1,400 employees and volunteers, the facility treats more than 150,000 patients each year in both inpatient and outpatient settings. The emergency department alone treats over 30,000 patients each year.



Lower Bucks Hospital Campus located in both Bristol Borough and Bristol Township.

The 36-acre campus consists of a 500,000-square-foot main hospital building, a separate cardiac rehabilitation building, and a separate two-story surgical ambulatory center. The hospital is currently in the process of a \$10 million project to expand the emergency department. This is part of an overall \$20 million improvement project that included building a new telemetry unit (16 beds) to care for the increasing number of cardiac patients, a new business office, and technology upgrades. Construction of the telemetry unit and business office has been completed.

The township is home to a nursing home and a personal care home that provide care for elderly residents. Silver Lake Center is a 174-bed nursing home located on Tower Road adjacent to the Lower Bucks Hospital campus. Legacy Gardens of Bristol is a 26-bed personal care home located on Bath Road. Grundy Gardens located on Hood Boulevard and operated by the Bucks County Housing Authority also provides accommodations for senior citizens in its 130 rooms. The number of persons age 65 and older will continue to rise over the next 20 years. The township should stay aware of the needs for health care for all township residents and encourage development of facilities to care for the aging population.

The township zoning ordinance allows a variety of uses that provide care for elderly or disabled residents including nursing homes, life care facilities, and adult day care centers. Accessory apartments are also permitted, which are often used by homeowners to provide housing accommodations for the care of elderly or disabled relatives. These uses are permitted in most zoning districts. The zoning ordinance

appears to adequately provide for elderly housing; however, demographic trends should be monitored and the zoning ordinance periodically examined to ensure that new types of facilities are provided for.

Summary of Recommended Actions—Health Care

- Monitor population trends and anticipate needs of aging baby boomers and seniors to ensure that the zoning ordinance provides for both the latest types of elderly care facilities and adequate opportunities for these sites in the township.
- Township officials should meet on a regular basis (i.e., annually) with hospital administration to discuss mutual needs and how township officials can help ensure quality health care for residents.

Educational Facilities

Public School District

The Bristol Township School District serves residents of the township. As of March 2007, the school district had an enrollment of 6,391 students. In general, enrollment has declined over the past few years. However, enrollment, as of March 2007, increased by 51 from the October 2006 total enrollment of 6,340 students.

The 13 district schools comprise a high school (grades 10-12), three middle schools (grades 7-9), and nine elementary schools (grades K-6). Table 7-2 lists public schools, their addresses, and enrollment information (as of March 2007).

TABLE 7-2
Public Schools in Bristol Township School District, 2007

Building	Address	Student Enrollment*
Harry S. Truman High	3001 Green Lane, Levittown	1,416
Neil A. Armstrong Middle	475 Wistar Road, Fairless Hills	516
Benjamin Franklin Middle	6403 Mill Creek Road, Levittown	360
Franklin D. Roosevelt Middle	1001 Rodgers Road, Bristol	586
Clara Barton Elementary	Blue Ridge Drive/Blue Lake Road, Levittown	512
James Buchanan Elementary	2200 Haines Road, Levittown	445
Mary W. Devine Elementary	Keystone Street, Croydon	410
Ralph Waldo Emerson Elementary	6501 Mill Creek Road, Levittown	373
John Fitch Elementary	Greenbrook Drive/Field Lane, Levittown	343
Lafayette Elementary	4201 Fayette Drive, Bristol	367
Abraham Lincoln Elementary	10 Plumtree Place, Levittown	363
Maple Shade Elementary	Prospect Avenue, Croydon	329
George Washington Elementary	275 Crabtree Drive, Levittown	371

* Based on school district enrollment figures, March 2007.

The district has been revising curricula in order to more effectively meet state requirements. With more emphasis being placed on math and English, additional classes have been provided to improve student proficiency in those subjects. Also, in an effort to begin providing preschool education, two prekindergarten classes (one morning session and one afternoon session) are scheduled to open at Maple

Shade Elementary School in April 2007. The district's engineer is currently in the process of evaluating all district facilities. A report regarding projected facility needs will be forthcoming.

Technical School

Bucks County Technical High School, one of the largest technical high schools in the state, is located within the township at 610 Wistar Road, Fairless Hills. This school combines technical training with academic programs for high school students from six separate school districts located in southern Bucks County. Serving grades 9 through 12, the school is currently at capacity with an enrollment of approximately 1,500 full-time students. About six years ago, the school became a comprehensive technical high school in which both academic and technical programs are taught. This enables students to attend the technical high school full-time; they no longer switch back and forth between the technical school and their local high school.

According to school officials, enrollment has generally been on the increase. There is currently a waiting list of 600 students. Of the 32 different instructional areas offered, those in most demand are the high tech programs, such as medical and computer technology programs, and manufacturing processes including robotics and electrical and mechanical engineering programs.

Each instructional area has a Craft Advisory Committee which is run and chaired by individuals from local industries in the community. The school works with the Craft Advisory Committees to tailor programs to meet the needs of industry. While there is no current discussion relative to building expansion or improvements, the school's administrative director noted it is essential for the school to stay tuned to the recommendations made by the committees and to continue making adjustments in curriculum as necessary to meet the needs of industry. This will help to meet the future employment needs in the community.

Nonpublic Schools

A number of nonpublic schools enroll students who live in the school district. The nonpublic school with the greatest enrollment of students from the district as of 2006–2007 is Conwell-Egan Catholic High.

College Facilities

A facility of higher education, the Bucks County Community College – Bristol Center, is currently located at 1280 New Rodgers Road (Route 413) in the township. This campus offers various college courses, with associate degree programs in Business Administration, Criminal Justice, Education, and Liberal Arts. Also, a variety of continuing education and workforce development programs are offered. The facility includes a computer lab and a library. Enrollment at the start of the spring 2007 semester was 1,036 at this campus, with most evening classes at full capacity.

For over a decade, the Community College has provided learning resources in rented space in this region of the county. Since it first opened in 1989, enrollment at this campus has surged 69 percent. Recognizing a need to establish a permanent, up-to-date facility to serve residents within the lower Bucks region, the Community College committed to developing a new 14-acre, \$21 million dollar campus. Phase I of the new Lower Bucks Campus, consisting of 35,000 square feet, opened in the fall of 2007. Phase II of the campus which will consist of 20,000 square feet, is scheduled to open in the spring of 2008.

With the current construction of the new facility, the college does not anticipate any building expansions within the next five years. Any possible improvements to the facilities will be made on an as-needed basis. Both staffing levels and curriculum offerings are dependent primarily on program enrollment and student interest, which usually mirrors employment demands in the community. The college continually monitors this information to address community needs. At this time, the college has no plans to add or reduce staff at this location.



The Lower Bucks Campus of the Bucks County Community College opened in Fall 2007.

In addition to educational opportunities provided to residents in the region, the campus library is open to the community, and the college intends to host events such as job fairs, community information programs, and cultural performances at the new campus.

The township and school district provide services to each other in the form of the use of facilities and maintenance services. For example the township's recreation department uses school district facilities to provide various recreation programs, while the township provides maintenance services for athletic fields at various school buildings.

Summary of Recommended Actions—Schools

- Maintain and enhance the existing cooperative relationship between the township, the Bristol Township School District, Bucks County Technical High School, and the Bristol campus of the Bucks County Community College.
- Coordinate actions of the township, the Bristol Township School District, the Bucks County Technical High School, and the Bristol campus of the Bucks County Community College to maximize use of tax dollars as facility needs change over time.

Libraries

The Levittown Regional Library is located at 7311 New Falls Road within the Bucks County Government Services Center in the township. Part of the Bucks County Free Library System, the library is open to the public and contains a total of 181,132 items, which includes books, magazines, videos, and CDs. This branch is connected to the fiber optic network at the Bucks County Library Center in Doylestown and has wireless access allowing library patrons to access the system using their own laptop. Approximately 48,843 residents within the library's service area have county library cards (35,757 adults and 13,086 children). The service area of the Levittown branch includes Bristol Township, as well as portions of several surrounding communities.

In the short term, the library has seen an increase in usage. Following state funding cuts in 2003 and 2004, library hours were reduced resulting in reduced usage. Since those cuts, the library has tried to restore what they can—hours of operation have increased, although not to the level before the cuts—and usage has increased.

The 5-year capital improvement plan calls for maintenance improvements and upkeep of the current facilities along with gradual and modest upgrades to the network. There are currently no plans for building expansion. The county library system is in the process of reviewing and analyzing collection use; reviewing how current dollars are spent and reallocating them based on current and future needs. While books will continue to be purchased, there will be a greater focus on downloadable media as it becomes available.

In anticipating community needs, library officials feel there will be a growing need to provide library materials to homebound individuals. The library system is getting requests to provide material to senior centers, assisted living facilities, etc. particularly from facilities in Bristol. As the population continues to age, this will become a greater need that will have to be addressed.

An additional library resource located within the township is the library at the Bucks County Community College Bristol Center. Although no longer part of the county library network, the college library is still open to the public. The library does expect an increase in the number of volumes and computers as part of the campus expansion (discussed under Educational Facilities).

Summary of Recommended Actions—Libraries

- Support activities of the library.

Municipal Administration

The current Council - Executive form of government has been in use since 1986. It replaced the previous 11 ward voting system that had been in place for decades. The current format calls for five elected Council members and an elected Mayor. All positions are selected by an at-large voting system. The township is governed as a First Class Township Home Rule Charter Option Part C, which allows for broad powers of self-government consistent with U.S. and Pennsylvania Constitutions and the Charter Laws.

The Council has recently studied the formation of a Government Study Commission and will be placing this question on the next general election ballot. If approved, the Study Commission will examine the current government format and other options that may lead to a more efficient form of government. There are various Committees, Boards and Authorities that are appointed by the Council and Mayor as prescribed by the Administrative Code. In addition, there are various professionals who are appointed by the Mayor and Council including the Solicitor and Township Engineer.

Under the current system the Mayor, with Council approval, appoints the Managing Director and Department Heads to administer the daily operations of the township. The Managing Director's office deals with all personnel functions, including administering health and pension benefits as well as the administration of the collective bargaining agreements. The township currently has bargaining agreements with the Transportation Workers Union, The Service Employees International Union and the Bristol Township Police Benevolent Association. The Police are also governed by an Appointed Civil Service Commission. All but seven employees are covered by bargaining agreements.

The Managing Directors' office is responsible for the administration of all bidding, contracts and grants received by the township. The Finance Officer and Finance Department including the Tax office are considered part of the Managing Director's office staff. The Mayor, in conjunction with the Managing

Director is responsible for the development of the annual budget. The budget is presented to Council for ratification prior to end of the fiscal year.

The Managing Director's office serves as the clearinghouse for all general information, press releases and directives of the township. The Managing Director's office is responsible for all Council meeting agendas and the retention of official minutes. All township departments report to the Managing Director including Finance, Public Works, Water and Sewer, License and Inspections, Fire Marshall/Emergency Services, Community Development, Police and Refuse and Recycling, and Recreation.

Due to general economic conditions, the Manager's office is heavily involved with seeking out grant opportunities and alternate funding sources. Working closely with the Bucks County Redevelopment Authority, the township is continually working to redevelop existing properties to increase revenue generation. The staff in the Managing Director's department is in need of expansion. The addition of a Grant Specialist as well as a Personnel Manager are viewed as top priorities. In addition, an Information Technologist reporting directly to the Manager is needed to separate the IT duties of the police department from the general township IT functions. New equipment is needed to upgrade the township records system and develop the Geographic Information System for all the administrative departments.

Summary of Recommended Actions—Municipal Administration

- Continue to seek grant opportunities and alternate funding sources for the implementation of township programs and initiatives.
- Continue to work with the Bucks County Redevelopment Authority to assist in the redevelopment of property consistent with the goals and objectives of this Plan.
- Evaluate the need and feasibility of adding additional township staff for municipal administration and other township departments.
- Upgrade township records system and develop a Geographic Information System for all administrative departments.

Public Works

The Bristol Township Department of Public Works office is located within the municipal complex at 2501 Bath Road. This site also houses the municipal salt sheds. The department has a second facility at 1630 River Road, which is used primarily for the repair of municipal equipment and a kennel with a capacity for eight animals.

With a full-time staff of 35 employees, the public works department is responsible for managing all township facilities, vehicles, and equipment, as well as maintenance of such facilities and equipment. In addition to snow removal, maintenance of approximately 170 miles of local streets, street lights, and municipal signs falls under the purview of the public works department. The department is also responsible for maintaining several miles of open drainage ditches, a large underground drainage system, and over 35 parks and greenbelt areas. The township's animal control officer works out of this department.

The department utilizes numerous pieces of equipment including backhoes, excavators, pavers, rollers, a hot box, tractors, driving mowers, light-, medium-, and heavy-duty trucks, dump trucks, a full bucket lift

truck, supervisor vehicles, an animal control vehicle, and two buses used for individuals performing mandatory community service.

In addition to routine maintenance and upkeep responsibilities, Public Works employees handle, on average, over 1,000 complaints a month. The most common of which relate to drainage problems, flooding conditions, and road and curb deterioration. The effect of the township's large resident and employee base utilizing aging infrastructure puts added strain on the system which, in turn, places constant demands on both the department's employees and budget.

According to the director, the department's greatest needs are additional funding, additional manpower, and facility expansion. Additional funding is needed to upgrade aging roads and drainage systems and to hire more employees. Additional personnel are needed to effectively carry out the department's responsibilities and to address relevant issues brought forth by residents and business owners. Expansion of the departments facilities is needed to adequately house staff, records, and equipment.

Summary of Recommended Actions—Public Works

- Determine appropriate levels of funding and staffing needed for department operations and necessary upgrades of public facilities.
- Adopt capital improvements programming to schedule funding and seek money to fund planned work.

Solid Waste Management

Solid waste management is the process of providing an economically and environmentally sound means of storing, collecting, transporting, processing, and disposing of waste and recyclable materials. In Pennsylvania, Act 101, the Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988, requires that mandated municipalities (municipalities with populations greater than 10,000 and smaller municipalities with a population of 5,000 to 10,000 residents and a population density of more than 300 residents per square mile) carry out a program to source-separate and collect at least three types of recyclables plus yard waste and to adopt resolutions, ordinances, regulations, and standards to carry out the responsibilities of solid waste management. These responsibilities are accomplished through municipal programs or through the regulation of private firms that collect and haul municipal waste.

Act 101 authorizes counties to prepare and periodically update a 10-year plan to guide the management of municipal solid waste. The *Bucks County Municipal Solid Waste Management Plan* (a revision to the Bucks County Municipal Waste Management Plan of 1991) was approved by the PADEP in January 2006, and adopted by the Bucks County Commissioners in May of 2006. It was recently submitted to the municipalities for adoption by the County of Bucks. By an ordinance dated May 2007 the plan revision was adopted by the Bristol Township Council. A new model municipal ordinance was created and subsequently adopted by the township in 2007. The revised plan provides continued guidance for solid waste management throughout the county to the year 2014.

The management of residential municipal waste collection and recycling is provided by Bristol Township through a municipal contract with a private hauler. The program addresses an extensive list of recyclable materials including; aluminum or steel food and beverage containers, three colors of glass food and beverage containers, #1 and #2 plastic bottles, newspaper, magazines, catalogs, and junk mail, as well as yard waste (which includes leaves, garden residue, shrubbery, tree trimmings, and similar material).

Business owners in Bristol Township contract directly with private haulers for solid waste collection, disposal, and recycling services. Haulers deliver the collected waste for disposal to a landfill or waste-to-energy facility while the recyclable components are delivered to recycling facilities in the region. The township also participates in the South East Pennsylvania Regional Household Hazardous Waste Collection Program, which it has done for over fifteen years, which provides the opportunity for residents to properly dispose of another component of the waste stream that should not be disposed in local landfills or waste-to-energy facilities.

The figures noted in the table below, reported as part of the township’s annual municipal recycling report for 2006, show the results of the efforts of the residents and businesses of Bristol Township. Over 6,700 tons of recyclable materials were diverted from the waste stream by the residents of the township, along with an additional 5,353 tons of material from township businesses. A residential recycling rate approaching 30 percent of the waste stream is notable and demonstrates the effectiveness of an aggressive recycling effort in the township. However, the limited commercial and institutional land uses in the township limits the amount of non-residential recycling thus resulting in a somewhat less overall recycling rate. Recycling efforts on the part of residents and businesses in Bristol Township will continue to conserve limited landfill space and contribute to the long-term sustainability of the environment.

**TABLE 7-3
2006 Township Recycling Rate**

Program Year	Total Reported Recycled (tons)	Commercial Recycling (tons)	Recycling Rate (%)
2006	9,447	2,729	19.79

Future Needs

The Commonwealth of Pennsylvania set a goal in 1997 to recycle 35 percent of the municipal waste stream by 2003, although the Commonwealth of Pennsylvania and the County of Bucks both reportedly reached this goal in 2002. Although this goal has been attained, continued effort on the part of each community is important in order to continue this success and possibly even increase these rates. It is suggested that efforts to maintain the involvement of residents continue, and even expand communication with businesses in the township to ensure that recycling programs are in place and to provide assistance where necessary in the review of their waste management programs.

These continued efforts will further increase the diversion of materials from the waste stream and, in addition, these tonnages may be included on the Pennsylvania Department of Environmental Protection’s Performance Grant application resulting in greater grand funding being available to the township.

Summary of Recommended Actions—Solid Waste Management

- Establish a program to collect recycling information from businesses operating in the township to assure they have a recycling program in place.
- Provide a program to offer assistance to businesses and institutions in the township to review their waste management programs and to assist them in their efforts to divert greater amounts of material from the waste stream.

- Establish an enforcement program that might entail an annual review/inspection of each business within the community.

CHAPTER 8

WATER RESOURCES AND USAGE

The coordination of water resources, wastewater facilities, and land use planning is a vital component of the comprehensive plan. Water and wastewater facilities are key factors in determining the location, nature, and density of future development. Periodic assessment of water resources, wastewater disposal methods, and service areas is necessary to ensure that adequate facilities can be provided to satisfy future development needs. Effective stormwater management practices can ensure that water quality is protected, peak stormwater flows are controlled, and groundwater recharge is enhanced.

Water Resources

Water resources can be broken into three primary factors—water supply, water quality, and stormwater management. The following discussion addresses the specific concerns and considerations of each.

Water Supply

The Pennsylvania Municipalities Planning Code (MPC) directs municipalities to consider water facilities in municipal comprehensive planning, zoning, and the development review process. Section 301(b), a revision to the code that became effective in January 2001, states that the comprehensive plan shall include “a plan for the reliable supply of water, considering current and future water resource availability, uses and limitations, including provisions adequate to protect water supply sources.” In accordance with the MPC, this plan is generally consistent with the State Water Plan.¹

Sources of water supply in Bristol Township include both surface water and groundwater and are discussed in detail below.

Surface Water

There are two public water suppliers serving Bristol Township with surface water: Aqua PA Bristol and the Lower Bucks County Joint Municipal Authority. Aqua PA Bristol uses both surface water from the Delaware River and groundwater from wells. This supplier is permitted to withdraw up to 11 million gallons per day of surface water to provide for its connections in Bristol Borough and Bristol Township. In 2003, it used nearly half of its permitted allocation to serve its customers.

The Lower Bucks County Joint Municipal Authority has an annual permit to withdrawal 16 million gallons of water per day from the Delaware River. Withdrawals totaling about 7.5 million gallons were made in 2003 to provide water to their distribution system in Bristol, Falls, and Middletown townships and Tullytown Borough.

¹ Act 220 recognizes the need to plan and manage water on a watershed basis without regard for political boundaries and with the understanding that water management programs should be based upon an accurate and current State Water Plan. Critical Water Planning Areas, where the demand for water exceeds or is projected to exceed available supplies, will be identified on a multimunicipal basis. A Critical Water Planning Area would serve as the planning boundary for a Critical Area Resource Plan or “water budget” for that area. Critical Resources Area Plans will include a water availability evaluation, will assess water quantity and quality issues, and will identify existing and potential adverse impacts on water resources. Act 220 makes clear that municipalities do not have the power to allocate or regulate water resources while preserving their power to regulate land use under the MPC. The act also establishes a program to promote voluntary water conservation and water use efficiency practices.

Groundwater

Groundwater is obtained for water supply from wells and springs. Some systems use springs as a significant source of water supply. Many of the Bucks County water suppliers obtaining water from surface sources also use wells to augment available water supplies or have wells available for emergency backup. Aqua PA Bristol uses groundwater from wells located in the Bristol Borough Edgely Wellfield (located in Bristol Township) to supplement its surface water supplies.

As noted in the Natural Resources section, groundwater supply is a product of the underlying geology of an area. Each geologic formation has unique groundwater yield capabilities directly related to its particular structure. The Natural Resources section describes the yield capabilities of each formation. However, this relationship does not ensure a uniform supply of groundwater from all points within a formation. In fact, well yields will show a considerable deviation from anticipated averages.

The Natural Resources section makes recommendations on the preservation and protection of groundwater that bear mentioning again in this section. Recommendations include ensuring efficient use, minimizing additional withdrawals, promoting infiltration of stormwater, and encouraging reuse.

In 2003 both water suppliers combined used approximately 13 million gallons per day of their 28 million gallon per day capacity. This leaves approximately 15 million gallons per day of capacity. This appears to be a sufficient amount of capacity for future development in the township. The township along with the water suppliers should continue to monitor the water supply to ensure that future development can be served.

Water Quality

There are two aspects of water quality. The first aspect is inappropriate or insensitive land uses and activities that can negatively affect groundwater and surface water quality on a site. The second aspect of water quality has to do with public awareness of contamination, its occurrence, and its solution.

The Bucks County Department of Health (BCDH) monitors the water quality of public supplies and enforces the water quality standards set by federal and state agencies. 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. Therefore, information on water quality problems of private wells is not readily available.

In 2005, the BCDH began certifying new private wells to help prevent residents from drinking contaminated water. The regulation applies to only new, not existing wells. The new program certifies that each well has a proper sanitary seal that can safeguard against groundwater contamination. To offset start-up costs, funding for this project is provided by a federal grant from the Centers of Disease Control and Prevention. While the well inspection/certification will only occur at the time a well is constructed, it is still recommended that people who rely on private wells have them tested every year or so to make sure they are safe.

The township subdivision and land development ordinance should include a statement that requires a water resource impact study be conducted when a proposed development is not served by a public water supply. The development should be required to meet specific conditions based upon the size and land

use proposed. The purpose of the water impact study is to determine if there is an adequate supply of water for the proposed use and to estimate the impact of additional water withdrawals on existing nearby wells, underlying aquifers, and streams. A water system should not be approved if it does not provide an adequate supply and water quality for the proposed use.

Source Water Protection for Public Water Systems

In accordance with the Safe Drinking Water Act and Pennsylvania's Source Water Assessment and Protection Program (SWAPP), the PaDEP conducts assessments of the susceptibility of public water system water sources to potential sources of contamination. The assessments cover both surface water and groundwater sources that are part of the public water systems. The purpose for conducting the assessments is to educate the public and promote the development of local source water protection. PaDEP offers a variety of support for municipalities, water suppliers, and the public to develop these local source water protection programs.

Wellhead Protection

The 1986 amendments to the federal Safe Drinking Water Act require that state governments create a wellhead protection program to protect the quality of groundwater used as sources of public drinking water supplies through local land use planning and other management means.

In March 1999, the state's Wellhead Protection Program (WHP), administered by the PaDEP, obtained approval from the Environmental Protection Agency (EPA). The responsibilities for the WHP are shared among many stakeholders but the foremost responsibility for ensuring that groundwater is adequately protected is at the local government level because the authority to regulate land use resides there. Wellhead protection programs involve the delineation of wellhead protection areas for wells and springs, identification of potential sources of groundwater contaminants and the development of management measures as a means to reduce the potential for contamination of the groundwater supply. For example, open space and low-density land uses are appropriate uses near high-production well fields.

In 1994, the county initiated the preparation of a water supply inventory and the development of a model wellhead protection program. This effort culminated in the production of the *1997 Bucks County Water Supply Plan and Wellhead Protection Study*. The water supply inventory provided information on the available water resources in the county and helped municipal officials in their planning to provide the public with an adequate, safe supply of drinking water. The model wellhead protection program selected six municipal wells, one of which was the Bristol Borough Edgely Wellfield, based on geologic formations, watersheds, growth stage, population, and number of community water system connections as demonstration sites for wellhead protection. The document provides guidance to municipalities in protecting public water supply wells from contamination.

The *1997 Bucks County Water Supply Plan and Wellhead Protection Study* recommended that the township adopt a wellhead protection program to protect groundwater resources. This comprehensive plan update also recommends that the program include the formation of a community planning team to begin the wellhead protection planning process, the development of a wellhead protection plan, and amendments to the zoning ordinance to implement the plan.

Stormwater Management

Stormwater runoff is the rainwater that moves over the ground during and immediately following a rainfall event. Stormwater runoff will move through a specific drainage area referred to as a watershed. In a watershed undergoing land development and urban expansion, the amount of stormwater runoff from a rainfall event can increase dramatically. This is due to the reduction of natural grassy or wooded areas resulting from increasing the impervious land (i.e., natural landscape being covered by pavement, rooftops, or buildings), which reduces infiltration.

It is this increased amount (volume) and speed (rate) of runoff that is responsible for some of the localized flooding and drainage problems associated with stormwater runoff. As development and impervious surfaces increase within the watershed, so too does the problem 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. It is important to recognize the watershedwide scope of stormwater management problems and potential solutions.

Act 167, the Pennsylvania Stormwater Management Act of 1978, was enacted to address the growing negative impacts of stormwater runoff. Act 167 requires DEP to designate watersheds and establish guidelines for the preparation of stormwater management plans for these watersheds. Counties are responsible for preparing the plans and developing ordinance language that municipalities must adopt to manage the volume and rate of stormwater runoff and the impact on water quality.

Bristol Township is located within two DEP designated watersheds: the Neshaminy Creek watershed and the Delaware River South watershed. The Bucks County Planning Commission has prepared stormwater management plans for the two watersheds and is in the process of finalizing an update to one of these plans. Bristol Township has adopted a stand-alone ordinance to implement the requirements of these plans.

The *Neshaminy Creek Watershed Stormwater Management Plan* was originally prepared in 1992. It mandated that ordinances be developed to require new development to provide stormwater management measures that at minimum detain the stormwater from the one-year design storm for 24 hours to provide a water quality benefit. Stormwater runoff beyond the one-year design storm is required to be released at different rates based on the location of a site within the watershed. The release rates vary for sites within a watershed according to the existing hydrologic conditions, proximity to existing flood control structures and streams, and need to protect downstream areas. The use of infiltration best management practices is encouraged to address runoff rates and volume and provide a water quality and groundwater recharge benefit.

The *Delaware River South Stormwater Management Plan* was prepared in 2004. The plan requires adequate storage and treatment facilities necessary to capture and treat stormwater runoff specifically for water quality purposes. In addition, a portion of the runoff volume must be infiltrated for groundwater recharge where feasible. There must be an attempt to maximize the capabilities of a development site to meet infiltration criteria. The plan also contains a design criterion to control the runoff release rates to prevent downstream flooding and streambank erosion. Low impact design and conservation development techniques must be considered for development sites, and design sequencing must be followed to avoid sensitive areas on a site (e.g., areas suitable for infiltration), minimize site disturbance, and minimize

increases in runoff and impacts to water quality. There also provisions for ensuring proper long-term operation and maintenance.

Bucks County recently completed an update of the Act 167 *Neshaminy Creek Watershed Stormwater Management Plan*. New requirements in this updated Act 167 stormwater management plan will assist in establishing more effective management of stormwater. The plan focuses on water quality and groundwater recharge similar to that established in the *Delaware River South Stormwater Management Plan*. More attention is given to the control of volume rather than rate of release in managing stormwater. A new standard requires a Permanently Removed Volume (1 inch of runoff) for all development sites. This means that one inch of runoff created from development on a site must be removed using suitable BMPs any way the designer sees fit.

In 2007, the township adopted an amendment to Section 518 of the subdivision and land development ordinance relating to stormwater management requirements. The revised section includes references to two new appendices that contain stormwater management requirements consistent with established criteria in the Delaware South plan and recommended through the update of the Neshaminy Creek Plan. These appendices also provide implementation of certain National Pollutant Discharge Elimination System (NPDES) Phase 2 requirements (see discussion below). Section 2102.k of the township zoning ordinance also specifically requires that stormwater be managed in accordance with the stormwater management requirements of Section 518 of the township subdivision and land development ordinance.

The 2007 revisions to Section 518 deleted design standards specific to stormwater collection systems that may not be covered by BMP manuals referenced in the new requirements. The township engineer should determine if design and construction elements related to stormwater collection facilities should be integrated back into the subdivision and land development ordinance.

Otter Creek Watershed Studies

In 2000, the engineering and land surveying firm of Pickering, Corts & Summerson, Inc. conducted the *Otter Creek Watershed Stormwater Management and Flood Control Study*. The study provided recommendations of projects to be implemented to alleviate flooding in the study area.

A later study entitled the *Otter Creek Watershed Restoration and Protection Plan* was completed in September 2002 by Borton Lawson Engineering. This study provided six recommended projects as part of an aggressive plan to retrofit existing stormwater systems and to encourage best management practices to alleviate current flooding problems, water quality impairment, and streambank erosion. Borton Lawson listed the following recommendations and six stormwater management projects to help address these problems.

1. Mill Creek along Red Rose Drive Bank Stabilization. Flooding Source: Mill Creek. Municipality: Middletown Township. While comprehensive stream restoration was not recommended anywhere in the watershed at the time, the section of Mill Creek along Red Rose Drive, near Everett School, was recommended for emergency streambank stabilization. This section of the stream has experienced accelerated shifting, which creates a public safety hazard as it migrates toward the school, homes, and Red Rose Drive. Emergency streambank stabilization would involve sloping the banks and the use of Rosgen structures to shift the erosive forces of the stream away from the bank and back into

the center of the channel until a comprehensive plan for stream restoration in the watershed is developed and implemented.

2. Wheeler Way Restoration Area. Flooding Source: Mill Creek. Township: Middletown Township. The section of Mill Creek between Route 1 and Silgan Plastics in the Bucks County Business Park has experienced accelerated erosion and sedimentation most likely due to increased flows. At the southern end of this site, the stream was diverted to make a 90-degree bend toward the east and then a second 90-degree bend to the south, then continues along the Silgan Plastics facility. The study recommends relocating this channel through the existing forest using the Rosgen design method to create a stable channel for the flows that it currently receives. The stream would also flow in and out of an oxbow lake off of its meanders. The purpose of the oxbow lake is to settle out excess sediments from the water, as well as reduce flows and velocities by helping to retain the water during storm events. This would lessen stream bank erosion and flooding potential downstream. The study also recommended that forested wetlands be constructed in this area in addition to naturally occurring areas. The purpose of the wetlands would be to filter out pollutants, retain some of the run off, and increase groundwater recharge.
3. Oaklihurst Restoration Area (Delaware and Wyoming Avenues). Flooding Source: Mill Creek (Tributary 2). Municipality: Middletown Township. A great deal of sedimentation and channel restriction has occurred in Mill Creek at the I-95 and Trenton Road bridges. These bridges create backwater in the Oaklihurst area and the tributary to Mill Creek that runs through the development floods. The recommended solution included stream restoration at the bridges, stream relocation in the development, and set-back levees to protect the development. Bridges that are not large enough to pass flood flows result in floodwater backing up upstream of the structure.
4. Mill Creek North of PA Turnpike I-95 (north and southbound) Bridges Restoration. Flooding Source: Mill Creek. Municipality: Middletown Township. The section of Mill Creek, North of PA Turnpike, is surrounded on both sides by a wide riparian buffer. Alongside the buffers are housing developments in which some houses repeatedly experience flooding. Set-back levees are proposed for this section of stream in order to retain the beneficial riparian buffer while providing flood protection for the surrounding developments. Constructed wetlands are recommended for future sites as both a means of controlling flooding and improving water quality, as well as improving habitat.
5. Trenton Road Overflow Culverts (Trenton Road at Mill Creek). Flooding Source: Mill Creek. Municipality: Middletown Township. The Trenton Road Bridge is a hydraulically inefficient structure because it causes approximately 2 feet of backwater in the 100-year water-surface elevation upstream. The proposed solution to this problem included the installation of additional culverts for conveyance of flood flows in the overbank floodplain of Mill Creek at the road crossing. These culverts would drain the water from the floodplain in a natural flow pattern rather than forcing the water back into the channel and through the existing opening. This would cut down on erosion and debris lodging in the vicinity of the bridge and clear accumulated sediment from the channel at and under the existing bridge structure.
6. Mill Creek North of PA Turnpike Setback Levees. Flooding Source: Mill Creek. Municipality: Bristol Township. This section of Mill Creek is surrounded on both sides by a wide riparian buffer. Alongside the buffers are housing developments in which some houses repeatedly experience flooding.

Recommended solutions included set-back levees for this section of stream, which will retain the beneficial riparian buffer while providing flood protection for the surrounding developments. Constructed wetlands are recommended for future sites as both a means of controlling flooding and improving water quality, as well as improving habitat.

Of the six projects Borton Lawson Engineering recommended, only recommendation number three (3), the Oaklihurst Restoration Area, has been implemented.

The Otter Creek watershed is rather developed. According to the 2002 study, it is important to consider retrofitting existing stormwater management facilities as well as proposing new facilities. Stormwater detention basins can be retrofitted with constructed wetlands or ground recharge trenches or can be converted to wet detention basins. These measures can control flooding and nonpoint source pollution to a higher degree than can standard dry detention basins.

An examination of grant programs should be made to determine the availability of funding for retrofitting or replacing substandard facilities or installation of new stormwater facilities. Much of the township was developed prior to adoption of the mandated plans and ordinances. Stormwater in most of the township is channeled into storm sewers and/or directly into streams, with no control over the velocity and amount of runoff. Moreover, stormwater management facilities constructed before the recent regulations are not providing any water quality protection or groundwater recharge benefit. Retrofitting or replacing inadequate facilities may improve localized flooding and/or improve water quality of streams receiving discharges from these facilities.

A stormwater utility district is a special assessment district set up to generate funding specifically for stormwater management. As with other utilities, users within this district pay a fee to be provided with the service of stormwater management. Revenue generated directly supports the maintenance and upgrade of existing storm drain systems, development of drainage plans, flood control measures, water-quality programs, administrative costs, and sometimes construction of major capital improvements.

In addition to retrofit projects, the *Otter Creek Restoration & Protection Plan* recommends the implementation of best management practices for wetlands and stream corridors for future stream protection and floodplain management. The use of traditional and innovative best management practices (BMPs) is encouraged to meet the recharge and water quality and quantity criteria established in stormwater management plans.

Municipalities in the Otter Creek watershed have floodplain ordinances and are encouraged to buy out structures that pre-date the ordinance and encroach into the floodplain. The 2002 Plan also recommends the implementation of riparian buffers for both wetlands and stream corridors. Riparian areas are areas of land located immediately adjacent to streams, lakes, or other surface waters. These areas are also described as the floodplain. Riparian buffer restoration areas were identified and mapped using GIS (Geographic Information Systems) software. The use of riparian forest buffers protect stream corridors and ensure compliance with state regulations. Buffering of wetlands is commonly used as a means of protecting aquatic resources. A three-zone system has been developed to help plan riparian forest buffers.

The majority of the proposed riparian buffer restorations, chosen due to their lack of vegetative cover, were situated along Mill Creek, Queen Anne's Creek, and their tributaries. Restoration of buffers is not performed in areas that are in need of morphologic stream restoration because stream restoration will destroy any plantings that have begun. It is recommended that a plan for stream restoration and riparian buffer restoration be developed for the entire watershed prior to the implementation of any such plans. Invasive species also pose another serious threat to the watershed, particularly in buffer areas.

The township has not formally endorsed the findings and recommendations of the *Otter Creek Watershed Restoration and Protection Plan*. This comprehensive plan update recommends that township officials endorse the study and initiate dialogue with the other municipalities in the Otter Creek watershed to implement the recommendations of the study.

NPDES II Regulations

The National Pollutant Discharge Elimination System (NPDES) is a two-phased federal program that seeks to establish local regulations resulting in a nationwide reduction of the pollutants in waterways. It includes stormwater discharge regulations. The municipal NPDES program must be correlated with the community's Act 167 stormwater management plan.

Phase 1 of NPDES targeted medium and large communities, as well as major and industrial facilities and development projects. Phase 2 of NPDES, aimed at smaller communities and construction activities on sites of 1 to 5 acres, requires municipalities to develop a stormwater management program that meets state permit requirements and includes six minimum control measures: public education and outreach, public participation, illicit discharge detection and elimination, and construction site and postconstruction runoff control and pollution prevention. Over an 8-year period, communities must fully establish a program to satisfy these requirements and evaluate its effectiveness. Annual reports must be submitted to DEP to signify how the municipality is meeting incremental elements of the program.

Thus far, Bristol Township has submitted the requisite annual reports in accordance with NPDES 2 program. DEP has expressed some concerns with the municipal program, particularly public education and outreach, public participation and involvement, illicit discharge detection and elimination, and the operation, maintenance, and inspection of municipally owned stormwater facilities. The township will be expected to address these concerns to ensure compliance with the program requirements.

Bucks County is helping municipalities meet NPDES requirements by advising on methods and ordinance language. This assistance is provided in accordance with Act 167 guidelines and goals to merge critical stormwater management issues, including groundwater recharge, under the umbrella of water resources protection.

Wastewater Facilities

The Pennsylvania Sewage Facilities Act (Act 537 of 1966), enacted by the Pennsylvania Legislature in 1968, requires that every municipality in the state must develop and maintain an up-to-date sewage facilities plan. The Official Sewage Facilities Plan (Act 537) is a concept plan formulated to provide for the adequate handling of the wastewater treatment and disposal needs of a municipality. Unless proposed facilities are consistent with the plan, the Pennsylvania Department of Environmental Resources cannot issue permits for the facilities. Permits can be issued only after the revision/supplement process outlined in Act 537 has been followed.

Section 71.14(5) of the Pennsylvania Sewage Facilities Act directs municipal officials to consider their community's comprehensive plan, zoning ordinance, and subdivision regulations in the preparation, review, and amendment of their official sewage facilities plan. Section 301(4) of the Pennsylvania Municipalities Planning Code of 1968 (Act 247) requires that a plan for sewage facilities be included in a comprehensive plan. Section 604(1) of the Code, dealing with the purposes of zoning, states that the provisions of zoning ordinances shall protect the public health and general welfare through adequate provisions for sewage facilities. Section 503(3) of the Code states that a community's subdivision and land development ordinance should contain standards for the installation of sewage facilities.

Consideration of wastewater collection, storage, treatment, and disposal are important factors in comprehensive land use planning. Coordination of the township's sewage facilities planning and land use planning is a primary aspect of Bristol Township's comprehensive plan. Planning for the proper types of sewage systems aids in implementing the township's land use goals and aids in ensuring the quality of the natural environment.

In 1998, township officials adopted the *Sewage Facilities Plan – Act 537 for Bristol Township*, replacing the *October 1989 Sewage Facilities Plan – Act 537*. The main goal of this plan was to review and revise, where necessary, the official Sewage Facilities Plan (Act 537) for Bristol Township. The plan divides the township into three main sewage management districts, each served by different Municipal authorities. With wastewater conveyed to five different sewage treatment facilities. District 1 and 2 are designated as service districts of the Lower Bucks County Joint Municipal Authority (LBCJMA) and the Bristol Borough Water and Sewer Authority (BBW&SA), respectively. District 3 is a service area of Bristol Township Sewer Department. Sanitary sewer collection and conveyance in these districts are owned and operated by its servicing authority and/or sewer department. Wastewater generated within District 1 is transmitted and treated at the LBCJMA wastewater treatment plant, whereas, that from District 2 is transported and treated at the Bristol Borough Water and Sewer Authority's wastewater treatment plant.

District 3, a service area of the Bristol Township Sewer Department, is further divided into four subdistricts and an industrial district, Keystone Industrial Sewer District, based on services provided by different treatment facilities for its wastewater treatment. Wastewater generated in Subdistrict 1 is treated at the Bristol Township Wastewater Treatment Plant, whereas, wastewater flows from Subdistrict 2 are conveyed for treatment at the LBCJMA's plant. Wastewater generated in Subdistrict 3 is transmitted to the Falls Township Authority's Treatment Plant. The plant was phased out and the flows diverted to the Neshaminy Interceptor of the Bucks County Water and Sewer Authority. Wastewater from Subdistrict 4 and the Keystone Industrial Sewer District are transferred to the Neshaminy Interceptor of the Bucks County Water and Sewer Authority.

Above described treatment services for Subdistricts 2, 3, 4 and the Keystone Sewer District are provided through Agreements. When these Agreements were made, the Bristol Township Treatment Plant had limited capacity. At the time of this plan's production the Bristol Township Sewer Department is removing inflow and infiltration (I and I) and upgrading pump stations.

The available capacity expansion at the upgraded treatment plant, rapidly rising cost of treatment and disposal of wastewater from the Subdistricts 3, 4 and of the Keystone Sewer District, and the disposal of sewage sludge generated at the Bristol Township Treatment Plant prompted Bristol Township officials

and the Bristol Township Sewer Department to review and revise the 537 Plan to address wastewater treatment alternatives, specifically for District 3.

An examination of wastewater management alternatives was performed to determine the most economic and environmentally sound alternative that could be used to effectively manage existing and expected future wastewater flows from Subdistricts 3 and 4 and from the Keystone Industrial Sewer District.

A total of four (4) wastewater management alternatives were considered for the above three (3) subdistricts which included (1) On-Site Sewage Disposal Systems (2) Land Application Systems, (3) Diversion of Wastewater Flows to the Bristol Township Wastewater Treatment Plant, and (4) No Action Alternative. It was determined that the recommended wastewater management alternative was to divert wastewater flows from the Subdistricts 3 and 4 and the Keystone Industrial Sewer District to the Bristol Township Wastewater Treatment Plant.

The township has experienced sewage capacity issues in recent years and in response, during 2007, began the process of updating the Act 537 Plan to address those issues. The Act 537 plan should be updated in accordance with the recommendations found in this Plan.

Summary of Recommended Actions

- Amend the subdivision and land development ordinance to require that a water resource impact study be conducted when a proposed development is not served by a public water supply.
- Formulate and adopt regulations regarding the establishment and protection of wellhead protection zones.
- Determine if design and construction elements related to stormwater collection facilities should be integrated back into the subdivision and land development ordinance.
- Continue to enforce the recommendations of the Delaware River South and the Neshaminy Creek stormwater management plans.
- Continue participation in the development of the Neshaminy Creek stormwater management plan update.
- Formally endorse the *Otter Creek Watershed Restoration and Protection Plan* and initiate dialog with other watershed municipalities to implement the plan.
- Continue to ensure compliance with NPDES program and file program reports.
- Review ordinances to ensure Bristol Township is implementing state-of-the-art stormwater BMPs.
- Identify flood-prone areas at the municipal level and determine if remediation measures are feasible.
- Establish regular maintenance programs for stormwater management facilities.
- Evaluate alternative best management practices (BMPs) for maintaining and retrofitting existing substandard stormwater management basins.
- Revise the Act 537 Sewage Facilities Plan in accordance with the recommendations of the Comprehensive Plan Update.

CHAPTER 9

TRANSPORTATION AND CIRCULATION

The growth and development of Bristol Township has been directly influenced by the transportation network. Via the major highway links of U.S. Route 13, Route 413, the Pennsylvania Turnpike, and Interstate 95, interstate traffic flows through Bristol Township. Passenger and freight trains use the mainline of Conrail and Amtrak in the township. Spur lines from the mainline serve many of the industrial uses, and a passenger rail station is located in the township. These transportation connections have made the township an attractive location for businesses that rely upon ground transportation to move their goods (e.g. warehousing, logistics, and manufacturing). These same roads also provided, and continue to provide, residents easy access to the region's outlying job centers.

The overall function of the transportation system is to provide for the movement of people and goods between particular places. The general adequacy of this system is directly influenced by the type and size of the population growth and land development that occurs along the network. Proper land use planning is critical to prevent adverse effects on the transportation network due to improper development. Conversely, when transportation improvements are designed, addressing the needs of the general public, individual property owners, and neighborhoods is important. Where appropriate, transportation improvements should be designed as multiple-use facilities that provide for pedestrians, bicycles, public transit, and automobile use.

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, highways, and railroads in the township will support the township's 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 the township.

Street Hierarchy

Policy guidelines regarding street classification and access management standards are especially important in light of the reality that funding levels for roads, the backbone of the transportation system, have not kept pace with the proliferation of motor vehicles, housing, and businesses. The backlog of needed road maintenance and construction projects has grown. Due to the reduction in funds available for highway capital improvement projects throughout Bucks County and the Commonwealth, it is essential that municipalities re-evaluate the existing roadways and institute policies and regulatory measures associated to the hierarchy to ensure that the existing roadways continue to function as efficiently as possible.

Road classification is the method by which streets and highways are categorized into classes, or systems, according to the type of service they provide. The road classification system recommended for Bristol Township is based on the Federal Highway Functional Classification, which is composed of four classes: Expressways, Arterial, Collector, and Local. These specific roadway types are defined in the township zoning ordinance and subdivision and land development ordinance. Specific roadway dimensional requirements are defined in the township subdivision and land development ordinance. The following provides the classification for each street in the township.

Expressways are designed to provide the highest level of mobility for large, high-speed traffic volumes. Expressways are limited access facilities that provide access to regional business and employment centers. There are only two expressways in Bristol Township: Interstate 95 and the Pennsylvania Turnpike (Interstate 276). Other than the proposed interchange between these facilities, it is unlikely any other expressways will be constructed.

Arterial Streets are designed to carry large traffic volumes and high-speed traffic with access to abutting properties controlled. Access onto arterial streets should be strictly controlled because the proliferation of turning movements at individual driveways to properties will degrade the function of an arterial street. New access points should be minimized and well-spaced so that speeds on the arterial road can be maintained at appropriate levels. Access management techniques, as described later in this chapter, should be considered by the township to protect the function of arterial streets. Arterial streets in Bristol Township include the following:

- **U.S. Route 13**—Stretching approximately 11 miles through Bucks County, the U.S. Route 13 segment serves as the northern terminus of U.S. 13. (U.S. Route 13 continues south for more than 525 miles to the area of Fayetteville, North Carolina.) The four-lane U.S. Route 13 was constructed in the mid-1950s as a spur from the U.S. 1 Expressway through Morrisville, terminating at the Bristol Pike (which continues the route of U.S. 13 south) in Levittown.

The corridor provides access to the oldest communities in the county and is an extremely important travel corridor for commercial traffic. This corridor provides parallel service to Interstate 95 and is complemented by parallel public transit service on SEPTA's R-7 regional rail line. U.S. Route 13 also contains several park and ride lots. The corridor also has direct access to major travel corridors such as Route 413 and the Pennsylvania Turnpike. Most importantly, the corridor is the main spine for the county's officially recognized "Enterprise Zone" and as such is vital in the county's overall plan for redevelopment.

- **PA Route 413**—Route 413 traverses the township in a north–south direction. Route 413 begins at the Burlington–Bristol Bridge over the Delaware River and provides a link between New Jersey and Route 611, which continues on to Easton. It is important that the township take measures to protect the carrying capacity and integrity of this road so that it can continue to function as an arterial street. The access management techniques described later in this chapter should be applied to the Route 413 corridor.
- **Other Arterials**—Other arterials in the township include Newportville Road, State Road, Durham Road, Bath Road, New Falls Road, Bristol–Oxford Valley Road, Mill Creek Road/Parkway, Green Lane, North Radcliffe Street, Edgely Road, Woodbourne Road, South Oxford Valley Road, and Levittown Parkway.

Collector Streets are designed to convey moderate volumes of traffic to and from arterial streets and to other collector streets. They also provide access to major local traffic generators such as business, industry, and public buildings. Access to collector streets from abutting properties should be carefully controlled as discussed above for arterial streets. Collector Streets include Cedar Avenue, River Road, Newport Road, Old Rodgers Road, Otter Street, Ford Road, Zimmerman Lane, Lakeland Avenue, Beaver

Dam Road, Bristol–Emilie Road, Airport Road, Haines Road, Wistar Road, South Olds Boulevard and Hood Boulevard.

Local Streets include all existing roads in the township that have not been classified above, and are categorized into three groups: *Primary*, *Secondary*, and *Marginal Access*. Primary streets are designed to carry a moderate volume of traffic and to intersect secondary residential streets and driveways of high-density residential uses, industrial parks, and other high traffic-generating uses. They also provide routes to collector streets and community facilities. Secondary streets are designed to provide access to abutting properties and a route to access primary streets. Marginal access streets are secondary streets parallel to and adjacent to an expressway, arterial, or collector street and provides access to abutting properties and protection from through-traffic.

Public Transportation

Currently, public transportation is provided within Bristol Township by Southeastern Pennsylvania Transportation Authority (SEPTA) rail service and fixed-route bus service. Rail service is provided by the SEPTA R-7 Regional Rail Station in the village of Croydon. Township residents also have convenient access to the Bristol Station located in Bristol Borough. SEPTA rail service provides access to Philadelphia and Trenton, New Jersey. SEPTA provides connecting service with New Jersey Transit in Trenton which provides service to New York. Bristol residents can also access AMTRAK's Northeast Corridor Service through the station located at Cornwells Heights in adjacent Bensalem Township. AMTRAK's Northeast Corridor provides access to New York, Boston, and Washington, D.C.

Bristol Township is served by three SEPTA bus routes: 128, 129, and 304. The 128 bus route provides service to State Road, the Bucks County Office Center and the lower Bucks campus of Bucks County Community College on Route 413, the Bristol Commerce Park Shopping Center, and the SEPTA train stations located in the village of Croydon and Bristol Borough. The Route 128 begins at the Neshaminy Mall in Bensalem Township and ends at the Oxford Valley Mall in Middletown Township. Connections to other SEPTA bus routes can be found at both malls.

The Route 129 bus route serves the Keystone Industrial Park, Bucks County Office Center, Silver Lake Park, Magnolia Industrial Park, and Black Ditch Park. Service to several train stations is also provided, namely, the Bristol Borough Station and the Langhorne Station in Langhorne Manor Borough. The bus route begins at Frankford Avenue in Philadelphia and ends at the Oxford Valley Mall. It also serves the Franklin Mills Mall. Interconnections to other SEPTA services can be found at both malls, as well as at the Frankford Avenue termination point.

The Route 304 bus route mainly provides service along the lower portion of the township. It serves the State Road corridor and several industrial parks in Bensalem Township. The bus route begins in Torresdale in Philadelphia and completes its route at the Bristol Borough train station. As development and redevelopment takes place, township officials should examine how the use of public transportation will be affected. The township should maintain a dialog with SEPTA and the Bucks County Transit Management Association to ensure that needs of its residents are being met.

Croydon Station Rehabilitation

The Croydon rail station lacks good pedestrian connections, shelters, and parking facilities. Pedestrians accessing the station from Cedar Avenue must walk to the railroad bridge and climb the dilapidated,

wooden stairs to the platforms. The existing platforms are low level and substandard in terms of length and condition. Where Cedar Avenue passes under the railroad line, the sidewalks become narrower and the area is dark and not well-maintained. There are currently 68 paid parking spaces. An additional 70 spaces are adjacent to the station, but they are not controlled by SEPTA. At the transit shelter, there is minimal lighting and few benches for waiting commuters.

SEPTA is moving forward with a \$12 million reconstruction of the Croydon Rail Station. The project will include enhanced parking and amenities, with the addition of 150 new park and ride spaces, Americans with Disability Act (ADA) accessible platforms, shelters, and landscaping. The Croydon Station Project will rehabilitate and upgrade the station area and increase the parking capacity. The redesign will include a bus turnaround and bus shelter, which will reduce the amount of time a rider spends waiting for a transfer and improve the pedestrian environment.

The project will include construction of new high level platforms and new canopies, shelters, and platform amenities along with the realignment of Cedar Avenue. Station reconstruction will also include site drainage and stormwater detention improvements, as well pedestrian pathway improvements in conjunction with bus loop optimization. A new parking lot will be provided on the outbound side along with a reconfiguration of the existing inbound side lot. In addition, the station and all pathways from the bus to the train shall be rehabilitated to ensure that the entire site is ADA compliant in all aspects. Renovation of the Croydon Station will provide safety, accessibility, and structural improvements that will enhance commuter comfort and convenience. The realignment of Cedar Avenue will help to alleviate a traffic bottleneck at U.S. Route 13 and provide increased capacity at the intersection.

Croydon Transit Revitalization Investment District

Bristol Township is struggling, as are many first generations suburbs of Philadelphia, with how to redevelop underused properties near major transit facilities and thereby increase a tax base from real estate already developed to or near capacity. Smart redevelopment is necessary to allow businesses to remain viable. The Croydon area is a suitable candidate for redevelopment. In order to entice redevelopment, a Transit Revitalization Investment District (TRID) study was initiated in early 2007.

The Transit Revitalization Investment District Act (Pennsylvania Act 238 of 2004) empowers municipalities, counties, and public transportation agencies to work cooperatively to establish TRIDs. TRIDs promote community revitalization by establishing value capture areas as a means to reserve designated tax revenues for public transportation capital improvements. They also promote the creation of private-public partnerships designed to encourage redevelopment in and around the public transportation facilities.

TRIDs also serve the basis for requiring planning studies, comprehensive plan and zoning amendments that enable the establishment of transit-oriented development (TOD). A TOD is a residential or commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership. A TOD should consist of moderate- to high-density housing along with complementary public uses including, but not necessarily limited to, jobs, retail, services, and professional office space, all concentrated in a mixed use development located along the regional rail system. A typical TOD has the transit facility at its central core with accompanying residential, commercial, and employment uses within walking distance, which is typically within 2,000 feet. TODs

emphasize a self-sustaining community and pedestrian-oriented environment and reinforces the use of public transportation.

The Croydon TRID planning study will assist Bristol Township's governing body in determining future funding options and generating new ideas to ensure efficient community growth. The study will focus on retaining neighborhood integrity, providing new housing opportunities, and creating TOD opportunities that bring jobs into the area and encourage private investment within the Croydon study area.

The Croydon Station area has the potential to be a prime example of a transit-oriented development. The current condition of Croydon could be simply described as a "transit adjacent" situation. All the right coordinating uses exist, but have poor pedestrian access, or they are in need of being redeveloped. The existing retail and apartments are built conveniently along U.S. Route 13 directly across from the train station. Behind these buildings are neighborhoods with significant population density and an intact pedestrian environment. The existing retail stores have some historic architectural elements and classic storefront windows, which could be improved easily with new paint, restored façades, and appropriate signage. The existing pedestrian environment lacks crosswalks, signals, and aesthetic interest. To make this station area more successful, pedestrian connections should be improved with pedestrian signals and crosswalks at Newportville Road and Cedar Avenue. Improving the façades of the existing buildings will make a tremendous difference in people's perception of the retail area.

Transportation Improvement Program

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 the Delaware Valley Regional Planning Commission (DVRPC) to be included as candidate projects for the regional Transportation Improvement Program (TIP). The regional TIP is updated every two years, in coordination with PennDOT'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)*, the addition of candidate projects is dependent upon federal allocations of transportation funding. DVRPC, in conjunction with the member governments of the region, then rank and select these potential projects from candidate projects lists (i.e., county TIPs) 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 PennDOT to be included in the state TIP.

As of the 2007–2010 DVRPC TIP, there are seven projects currently programmed for funding in Bristol Township. These projects are shown in Table 9-1. below.

**TABLE 9-1
2007–2010 DVRPC Transportation Improvement Program**

Project Name	Project Description	Construction Year
I-95 / PA Turnpike Interchange	Construction of a full interchange between I-95 and PA Turnpike, relocation of toll plazas, and widening of I-95 between Route 413 and U.S. 1.	2008
Route 413 Corridor Improvement Project	Widen Route 413 from Old Lincoln Highway to Bath Road to accommodate a third center lane for left turns	2008
U.S. Route 13 Closed Loop Traffic Signal System	Installation of a closed loop traffic signal system on U.S. 13 from PA Turnpike to Bucks County Line.	2007
U.S. Route 13/PA Turnpike Safety Improvements	Provide interim safety improvements with regard to truck traffic. Study potential for long-term improvements.	2010
U.S. Route 13 Betterment Project	Restoring the pavement through base repair, milling, overlay, resurfacing, drainage improvements, signal modernization, and guiderail improvements to U.S. 13 from Route 413 to Levittown Parkway.	Beyond 2010*
State Road Drainage Improvements	Correct stormwater/drainage problems on State Road from Elm Street to Neshaminy Creek	Beyond 2010*
U.S. Route 13 Croydon Area Redevelopment Project	Complete rehabilitation of the Croydon business district. Will serve as the impetus to completing rehabilitation efforts along the entire 11-mile corridor.	Beyond 2010*

*Those projects with the construction year noted as "Beyond 2010" have funding for phases other than construction (e.g. final design, right-of-way acquisition, etc.)

As development occurs along the roads slated for improvement, the township should work with developers to ensure that transportation improvements are made in accordance with these future projects.

Bristol Township should 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.

Interstate 95/Pennsylvania Turnpike Interchange

The largest project in the township and the county is the construction of an interchange between Interstate 95 and the Pennsylvania Turnpike. The Pennsylvania Turnpike/Interstate 95 Interchange Project will provide a currently missing direct connection of these two highways. This project will reduce congestion on local roadways as well as improve the flow of traffic in the Philadelphia region. The first phase of the project includes building a high-speed interchange that directly connects the Pennsylvania Turnpike and Interstate 95, a new turnpike mainline toll plaza, and widening of the Turnpike and Interstate 95. The second phase involves construction of a bridge over the Delaware River parallel to the existing bridge.

As part of new interchange, several bridges will be widened to allow for widening of the Turnpike and Interstate 95. The Bristol–Oxford Valley Road bridge over the Turnpike will be closed and detoured starting in early 2008. Reconstruction of the bridge is expected to be completed by fall of 2008. The Ford Road bridge over Interstate 95 will be replaced starting in early 2009 and will be completed by fall of 2009. Since both roadways will be closed and detoured during bridge replacement, the township should continue to participate in the Incident Management Coordinating Committee that has been established by the project to ensure that the needs of motorists and emergency personnel are addressed.

Neighborhood Enhancement Study

Completed in February of 2002, the *Neighborhood Enhancement Study—A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues* examined the impacts of the proposed interchange on the communities of Bensalem, Bristol, and Middletown townships. The study addressed problems and substandard conditions in the townships that could affect the well-being of the communities. It also suggested enhancements to specific areas designed to improve the value of these communities.

Since this document was created specifically for the Interchange Project, it did not analyze Bristol Township's entire roadway system, but it did provide specific recommendations for the following areas. The areas identified for improvements and a summary of the recommended improvements are found below.

- **New Falls Road/Durham Road/Old Zimmerman Lane Intersection**
Signal retiming and widening along New Falls Road.
- **Nebraska Street/New Falls Road Intersection**
Widening of existing intersection. The study indicates that this improvement may occur as part of the interchange project.
- **Pedestrian Access along New Falls Road from Newportville to Middletown Township**
Construction of a 4-foot-wide sidewalk along New Falls Road from Nebraska Street to Durham Road.
- **Ford Road/Newportville Road Intersection**
Installation of a traffic signal was completed in 2005.
- **Groveland Avenue/New Falls Road Intersection**
Clearing and landscaping improvements on corner parcels and regrading of New Falls Road from Groveland Avenue to the Newportville Fire Company.
- **Nichol Street Walking Path**
Addition of amenities such as fencing, signage, and landscaping.
- **Newportville Road/New Falls Road Intersection**
Add a left turn lane on New Falls Road and signal retiming improvements.
- **Route 13/Green Lane Intersection**
At the completion of the study intersection improvements had been designed. The study endorses these improvements.

The township should ensure that the recommendations of the study are followed as the Interchange Project is constructed. Furthermore, the township should consult the recommendations in the study as development occurs at or near the areas identified in the plan.

U.S. Route 13 Revitalization Plan

The U.S. Route 13 corridor is one of the most heavily traveled corridors within the township. U.S. Route 13 traverses Bensalem Township, Bristol Borough, Bristol Township, and Tullytown Borough. Recognizing the need to improve the corridor, the U.S. Route 13 Task Force was created. This task force was composed of representatives of the Bucks County Redevelopment Authority, the Transit Management Association of Bucks County, the Bucks County Planning Commission, and each of the four municipalities, as well as other interested parties. It was through this task force that the *U.S. Route 13 Revitalization Plan* came into being. The study examined the existing condition of the corridor, potential changes to the corridor, how the corridor could be developed based upon municipal input, and suggested changes necessary to develop the corridor to provide the greatest safety of the travelers on the roadway, while at the same time providing for economic development potential. This study was completed in 2004.

Within Bristol Township, U.S. Route 13 varies from a two-lane cross-section with unlimited turning movements to a six-lane cross-section with a center median including cross-sections with two travel lanes and a center turn lane, and four lanes with a median. U.S. Route 13 commercial streetscapes are unattractive and characterized by a harsh visual clutter of signs, overhead power lines, and traffic devices. Fundamental pedestrian amenities, such as serviceable sidewalks, shade trees, pedestrian lighting, and street furniture are largely missing. Unpleasant streetscapes are damaging for business in that they discourage pedestrian traffic and business patronage.

One recommendation of the study was to implement streetscape beautification along the corridor. Streetscape beautification is one of the primary ways a community can invest in its town center. Improved streetscapes create an inviting and attractive public face for the community and provide a positive feeling to visitors. In addition to improving the public image of U.S. Route 13, pleasant streetscaping can have a significant traffic calming effect by transforming the perceived character of certain roadway segments to "mainstreets."

The U.S. Route 13 study also identified needed improvements to the spacing, location, and design of driveway access. Driveway access improvements can reduce the number and frequency of vehicle turning conflicts and thereby improve operations and safety in the U.S. Route 13 corridor. Short-term improvements for providing access to nonconforming parcels may include a reduction in width of access openings, definition of access driveways, consolidation of access openings, and closing existing access points in conjunction with planned reconstruction projects. Long-term improvements for providing access to nonconforming parcels may involve additional modification of the site access to achieve the recommended corner clearances and driveway spacing. Long-term opportunities to further improve property access are recommended to be explored as sites are redeveloped or in conjunction with future development of adjacent parcels.

The study also identified U.S. Route 13/Cedar Avenue/Walnut Avenue as a problem intersection due to the diminished levels of service at the intersection. Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. LOS measurements range from levels A to F, with LOS A representing the best and LOS F the worst. According to the study, the intersection of U.S. Route 13/Cedar Avenue/Walnut Avenue is operating at a LOS E in both the morning and afternoon peak periods. The high traffic volume on the westbound Cedar Avenue approach is the main cause of delay at the intersection. The intersection is projected to operate at a LOS D in the morning peak period and LOS F in the afternoon peak period in

the design year (2025). As part of the analysis in this study, the shared left turn/right turn lane of the westbound Cedar Avenue approach was recommended to be widened to an exclusive left turn lane and exclusive right turn lane. The widening of the westbound approach and optimized timing resulted in a LOS B in the morning peak period and LOS D in the afternoon peak period. The widening of the westbound approach would not require any additional right-of-way based on the existing traffic signal permit plan. Due to the grade change west of U.S. Route 13, however, the widening would require a new retaining wall.

The plan also recommended some pedestrian improvements to this intersection. Recommendations included adding pedestrian signals at the southbound U.S. Route 13 approach and eastbound Walnut Avenue approach; adding striped crosswalks at the southbound U.S. Route 13 approach and eastbound Walnut Avenue approach; and installing pedestrian warning signs along the northbound and southbound U.S. Route 13 approaches.

When this comprehensive plan update was completed, construction was not completed on the projects recommended in the study. However, the U.S. Route 13 Betterment Project and U.S. Route 13 Croydon Area Redevelopment Project, which are both found on the 2007–2010 DVRPC TIP, incorporate the recommendations from the study.

As areas along U.S. Route 13 are developed or redeveloped, the recommendations in the U.S. Route 13 should be implemented. Furthermore, the township should work with PennDOT to ensure that the recommendations are included in any future rehabilitation projects undertaken by PennDOT.

Context Sensitive Solutions

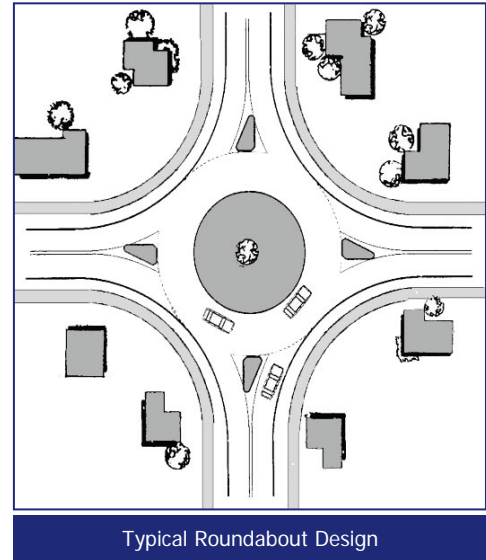
Context sensitive solutions are a proactive approach to transportation planning, design and implementation that looks at the extensive context the transportation network plays in enhancing communities and natural environments, be they urban, suburban or rural, scenic or historic. The concept involves asking questions first about the need and purpose of the transportation project, and then equally addresses safety, mobility, and the preservation of scenic, aesthetic, historic, environmental, and other community 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 of life for transportation users, communities, and the surrounding environment. The township should use a context sensitive solutions approach as roadways and bridges in the township are being considered for reconstruction.

Traffic Calming

Traffic calming measures are mainly used to address speeding and high cut-through traffic volumes on neighborhood streets. These issues can create an atmosphere in which nonmotorists 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.

Several areas in the township may be appropriate for traffic calming initiatives. For example, the “Five Points” area at the New Falls Road/Woodbourne Road/Bristol-Emilie Road intersection should be studied further to determine if traffic calming is appropriate. Motorists have been observed bypassing the intersection by using Gardenia Road. This “cut-through” traffic may pose a safety risk to residents along the road. Therefore, appropriate traffic calming techniques should be investigated in this area.



In order to initiate traffic calming, Bristol 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 nonmotorized 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 violation 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.

Traffic Calming Techniques



Center planted medians encourage drivers to slow down. Breaks in highway provide safer crossings for pedestrians.

Pedestrians and Bicyclists

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.

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 put urban environments back on a scale for sustainability of resources (both natural and economic) 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, Bristol 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.

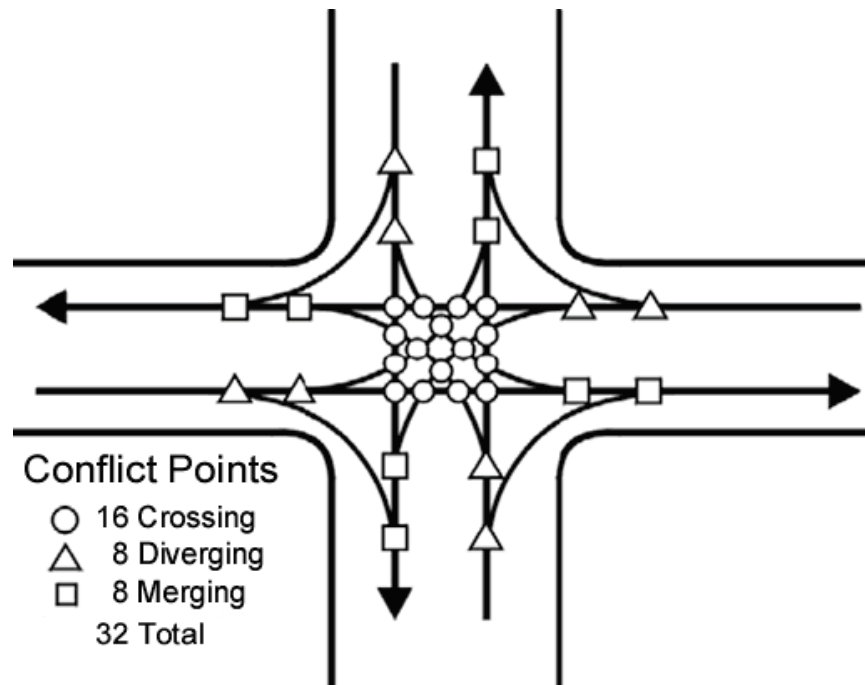
The township should also consider construction of sidewalks on streets where there currently are none. Throughout the township, pedestrian connections to nonresidential uses and to other neighborhoods are limited, especially in the Levittown neighborhoods. The New Falls Road corridor is one example of where sidewalks are needed. In the absence of sidewalks, informal walking paths have developed along the road. The township should study this issue further and consider improving these informal walking paths with sidewalks, shade trees, pedestrian lighting, and street furniture. This will improve pedestrian accessibility and safety.

In many communities, bicycle systems are important and much appreciated facilities. The subdivision and land development ordinance could be revised to include requirements for bicycle improvements in addition to or in place of sidewalks in appropriate areas. A bicycle plan should be prepared to determine the best routes to connect existing and anticipated developments with schools, shopping areas, parks and playgrounds, employment centers, and other key community locations. The bicycle system would be used and enjoyed by all the township residents, as well as people who work, shop, or visit Bristol Township. More information on trail development that may include bicycle and/or pedestrian paths can be found in the Park, Recreation, and Open Space Planning chapter of this plan.

Access Management

Controlling the number of access points allows roads to perform their intended function. When access is not controlled, the number of conflict points with roadway traffic increases. This places serious demands on the roadway capacity, as well as making conditions unsafe for vehicles entering or exiting the highway. The conflict between safe and efficient movement of traffic and access to abutting properties has long been recognized as a limiting constraint in traffic operations and transportation systems management.

The basic approach is to minimize the number of conflict points along these roads and to provide safe and efficient access to properties along roads. A conflict point is a place where two vehicles come together or their paths cross and one or both drivers must take evasive action to avoid collision. The simple intersection of two roads results in 32 conflict points as illustrated below.



Access management includes such techniques as shared driveways, providing access to secondary roadways, driveway spacing, planted median strips, protected left turn lanes, and any other appropriate access control measures. Access management is both a land use and traffic issue. It calls for land use controls and incentives that are keyed 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 to not limit new development in order to expedite traffic flow. Therefore, the township must also take into account the access requirements of businesses that may relocate into the area, as well as those vehicles traveling through the area.

There are several roads in the township that are candidates for access management improvements. The *U.S. Route 13 Revitalization Plan* identified access management problems in the U.S Route 13 corridor and provided recommendations for improvements. The PA Route 413 corridor from Durham/Bath Road to U.S. Route 13 was recently rehabilitated with improvements that included elements of access management. In 2006 the *PA Route 413 Transportation Community Development Initiative* study was completed that recommended that the same type of improvements to PA Route 413 continue from Durham/Bath Road to New Falls Road. Portions of other arterials in the township such as New Falls Road, South Oxford Valley Road, Levittown Parkway, and State Road suffer from varying degrees of access management problems.

Bristol Township should develop an access management plan. This plan should include an analysis of current and projected land uses 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. PennDOT has recently completed developing model ordinance language for access management. PennDOT's Center for Program Development should be consulted during development of the plan. This plan should be adopted by the township and included in the subdivision and land development review process.

The preparation and adoption of an Official Map indicating future right-of-way, new public roads, and driveway access points is also a very effective means of implementing major components of the access management plan. Common access for several parcels of land can be included as a part of the map, thus reducing traffic congestion and improving the free flow of traffic.

Summary of Recommended Actions

- Work with SEPTA and the Transportation Management Association of Bucks County to ensure that the public transportation needs of its residents are being met.
- Work with SEPTA with the renovation of the Croydon Station and the implementation of the Croydon Transit Revitalization Investment District recommendations.
- 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 Transportation Improvement Programs.
- Work with the Turnpike Commission to ensure that the needs of motorists and emergency personnel are addressed during the construction of the Interstate 95/Pennsylvania Turnpike Interchange.
- Ensure that the recommendations of the *Neighborhood Enhancement Study—A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues* are followed. The township should consult the recommendations of the study as development occurs at or near the areas identified in the plan.
- Work with PennDOT to ensure that recommendations from the *U.S Route 13 Revitalization Plan* are included in any future rehabilitation projects undertaken by PennDOT.

- Utilize a context sensitive solutions approach as roadways and bridges in the township are reconstructed.
- Develop specific policies regarding traffic calming, including the participation of any neighborhood that could be impacted by the addition of traffic calming measures.
- Prepare a study to determine locations for new sidewalks to connect residential and nonresidential land uses. The Levittown neighborhoods should be carefully examined.
- Prepare a bicycle plan to determine the best routes to connect existing and anticipated developments with key community locations.
- Develop an access management plan to be included in the subdivision and land development review process.
- Consider the preparation and adoption of an official map indicating future right-of-way, new public roads, and driveway access points in order to implement the access management plan.

CHAPTER 10

ECONOMIC DEVELOPMENT, REVITALIZATION, AND VITALITY

This chapter focuses on what today's businesses' need and how Bristol Township can accommodate those needs to improve the business climate. This involves improving the townships quality of the life and improving the workforce. Companies involved in the knowledge economy go where the qualified workforce is and not where the best tax deals are offered. As part of the effort to attract business the township should plan their investments in infrastructure to get the best return on their expenditures. The recommended actions are described in the following sections: Local Economic Development, Bristol Township and the Knowledge Economy, Economic Vitality, and Fiscal Impacts and Capital Improvement Programming.

Local Economic Development

The township has an important role to play in local economic development. As the local governing body, its policies and regulations affect businesses and their ability to compete in local and national markets. The township can assist local business by providing streamlined processes for approval of permits and assistance with locating property and buildings, and by providing an attractive tax environment.

Small business startups need assistance with understanding local regulations. The township office is one of the first places a startup business owner will visit. Helpful, knowledgeable assistance at the township offices can make it easier for a small business to start with a minimum of roadblocks.

Township officials are often aware of property vacancies and can link business owners with building owners. Township officials, such as the manager, may know of a business seeking to relocate and can steer it to another facility within the township or direct the business owner to the Bucks County Economic Development Corporation (BCEDC) and the Bucks County Department of Community and Business Development (DCBD) for further assistance.

The BCEDC is a nonprofit corporation that offers a wide variety of financial services, site selection assistance, and other programs including training and coordination with local governments. Among the site selection assistance offered is an on-line database of all vacant office and industrial space available throughout the county.

The DCBD helps coordinate the Bucks County Commissioners' economic and business initiatives in cooperation and partnership with various agencies and groups in the county. After a needs assessment, they may refer small businesses to the Service Corps of Retired Executives (SCORE) and the Temple Small Business Development Center for technical support, personalized coaching, and consulting; to the Bucks County Office of Employment and Training for human resources functions such as personnel recruitment; and to the local chamber of commerce for networking opportunities.

The DCBD administers a variety of federal, state, and county funding programs and provides assistance to small businesses. For example, small businesses are encouraged to apply for economic development loans funded through the Revolving Loan Fund. All loans are established with the requirement of job creation. Workshops and seminars for small businesses, with an emphasis on women and minority-owned

enterprises, are hosted by the department on topics such as contracting opportunities and business certification.

Economic Development Programs

Bristol Township is involved with several economic development programs. One program involves county and state agencies with designation of areas as an Enterprise Zone. The township also offers tax deferment through the LERTA program. A third program that the township should consider is the Keystone Opportunity Zone.

Enterprise Zone

The Bucks County Enterprise Zone provides benefits to areas within Bristol Township including grants, job training, tax credits, and minority business development offered by the Pennsylvania Industrial Development Authority.

The Enterprise Zone Program is designed to increase the quantity and quality of the available job opportunities within an Enterprise Zone area. Enterprise Zone areas in Bristol Township include Rohm and Haas, Croydon Industrial Park, Keystone Industrial Park, Bristol Industrial Park, Green Lane, Riverfront North, Edgely Industrial Park, and Riverside Industrial Complex. Designated Enterprise Zones are given priority consideration to facilitate business investment and job creation. The business development strategy is designed to maximize new private sector investment by optimally utilizing public sector resources.

A primary mission of the Enterprise Zone is to provide the coordination and communication between the business community and the public sector. The Enterprise Zone of Bucks County can be effective in coordinating business needs (financial or technical) with the correct public sector agency and providing the business community with access to existing and new resources (financial and technical) available for business growth and expansion. The Enterprise Zone Program places a priority on assistance to businesses involved in industrial, manufacturing and export services.

Local Economic Revitalization Tax Assistance

The Local Economic Revitalization Tax Assistance (LERTA) program allows a company constructing a new facility or a major expansion to defer the increase in real estate taxes on the value of the construction over a period of ten years. In other words, the real estate tax increase attributed to the increased assessment due to improvements is phased in over a five-year period by increasing the taxes paid by 20 percent per year until the full assessment is reached.

Keystone Opportunity Zone

The Keystone Opportunity Zone (KOZ) was established to attract investment by offering greatly reduced or no tax burden for property owners, residents and businesses. The zones have been designated by local communities, approved by the state and are a partnership between each community and region among the state and local taxing bodies, school districts, economic development agencies, and community-based organizations.

An area must meet several qualifications to be designated a KOZ. For instance, the area must display evidence of adverse economic and socioeconomic conditions within the proposed zone, such as percentage of abandoned or underutilized property and/or population loss. School districts and county

and municipal governments must have passed binding legislation forgoing certain taxes. There must also be coordination with other regional community and economic development activities.

Land Recycling

The soils on a number of sites in Bristol Township have been contaminated by previous commercial and industrial uses. These sites, commonly known as brownfields are a liability to the township not only because they may contain substances hazardous to human health but are also resources which do not bring in tax revenue. Cleaning up brownfields eliminates health hazards and returns valuable land to productive use. Brownfield sites are complicated to redevelop without funding and technical assistance from federal and state government. Sources of assistance include the US EPA, HUD, Pa DEP and Pa DCED.

Pennsylvania law encourages cleanup and redevelopment of brownfields through the Commonwealth's Land Recycling Program (Act 2). Act 2 provides incentives to promote voluntary site remediation and is composed of four cornerstones: uniform cleanup standards, liability relief, standardized reviews and time limits, and financial assistance that help promote remediation and break down redevelopment obstacles. Site cleanup which attains compliance with one or any combination of the three environmental standards, may take advantage of liability protection provided in Act 2 which protects site owners from future legal action.

Local Business Survey

In March of 2008, a survey was sent out to businesses in Bristol Township as part of this comprehensive planning process. The purpose was to identify the profile of area business owners and solicit their opinions on problems and opportunities affecting township's existing and future businesses. Approximately 2,200 surveys were mailed out and approximately 150 returned.¹ This represents about a 12 percent response rate, which is considered very good for this type of survey and conveys a general enthusiasm of the survey's planning issues.

Overall, those surveyed seem to appreciate the opportunity to provide their input and many of their issues are apparent. For instance, about 41 percent of the respondents indicated that the business climate in the township was "good," however, 34 percent indicated that it is just "fair." Other questions seemed to suggest some areas that need improvement. For instance, a survey questions asks, "From a business perspective, what are the three biggest challenges Bristol Township will face in the next five years?" Based upon the overall total responses and percentages, taxes and other costs (22.6 percent), the cost of doing business (16.8 percent), and crime (14.0 percent) were the top three responses.

When questioned about the three most important things Bristol Township could do to improve your ability to operate a successful business in the township, the top three responses were beautify streets (17.2 percent), increase police presence (15.5 percent), and better licensing and regulatory environment (13.7 percent).

Township officials will continue to analyze results of the survey, but these responses should prove helpful to township officials for improving and enhancing the township's business environment. (See Appendix A for full survey results). As the result of this survey, it is apparent that an ongoing dialogue with the

¹ Approximately 235 surveys were returned due to an incorrect or nonexistent address listing.

business community would be insightful. A regular forum will not only provide an avenue for township officials to keep in touch with the pulse of business owners, but also educate business owners as to the basis of business taxes and service costs.

Recommendations for Action—Local Economic Development

- Provide a one-stop shop for local business assistance including procedures and trained staff aimed at expeditious help for business owners.
- Evaluate impact of existing business taxes on local businesses and industry.
- Coordinate local economic development activities with the Bucks County Economic Development Corporation and Bucks County Department of Community Business Development.
- Promote use of Enterprise Zone, KOZ, LERTA and Land Recycling programs.
- Establish an annual forum between the business community and township officials provide an open dialogue and promote an improved business environment.

Bristol Township and the Knowledge Economy

Bristol Township came of age in the time of the old manufacturing economy which was based on processing of raw materials, proximity to transportation, and blue collar labor. Rohm & Haas, 3M, and Thiokol were the major employers. Economic development efforts in the old economy were based on attracting industry by providing cheap land, cheap energy, and low taxes. The economy has changed and economic development efforts must change as well.

The Knowledge Economy involves applying knowledge and doing business in new and creative ways to a wide range of products and services from agriculture to software. The Knowledge Economy focuses on speed, quality, flexibility, knowledge, and networks which have become the new sources of competitive advantage faced by all industries. The Knowledge Economy requires provision of a high quality of life for an educated workforce and ability to learn and adapt to new technology and business conditions.

In the past creating new jobs was the means to success in economic development. Today existing jobs must be enhanced by raising wages and quality of life, which can both be accomplished by boosting the skills of the workforce. A skilled workforce is provided by high quality education in the schools and ongoing vocational training opportunities.

The township should create a collaborative environment among government and business, and provide a customer oriented and responsive government. Streamlining the permitting process to give businesses the needed flexibility to redevelop old facilities and build new will enhance economic development.

There are a number of changes to the physical environment that can be made to enhance economic development in the Knowledge Economy. Infrastructure investments in telecommunication and internet access are necessary for new business. Amenities such as cultural facilities, natural resource integrity, and public safety can be enhanced. Traffic mobility can be improved by road improvements, transit oriented development, and greater transit availability.

The township's neighborhoods and villages can promote interaction, accessibility, and creativity required by the Knowledge Economy. These areas may also provide for work-live environments to facilitate the energy necessary for creativity. Creativity is encouraged by work and living environments that allow for a

lot of interaction among people. Chance encounters in hallways, restaurants, neighborhoods, and conferences lead to new partnerships and solutions to common challenges.

The new raw material for business is knowledge and creativity—to find better ways to do things and creating new products. Creative people desire to be where the action is and they like distinctive places. Rather than focusing on being a cheaper place to do business the township should focus on becoming a better place where an educated, well-paid workforce wants to live and provide the infrastructure this workforce needs to succeed.

Recommendations for Action—Knowledge Economy

- Support and public education and vocational training.
- Streamline permitting process to facilitate redevelopment.
- Coordinate investment in telecommunication infrastructure with providers.
- Improve traffic mobility through the implementation of the recommendations of Chapter 9 Transportation and Circulation.
- Enhance natural resource integrity through the implementation of the recommendations of Chapter 4 Natural Resources.
- Enhance cultural facilities through the implementation of the recommendations of Chapter 5 Cultural, Architectural and Historical Resources.
- Enhance public safety through the implementation of the recommendations found in Chapter 7 Community Facilities and Services.

Economic Vitality

Township officials desire to maintain and enhance a strong economy by retaining regionally and nationally known businesses and encouraging the growth of small- and medium-sized businesses. By retaining and building productive partnerships with the business community, officials could foster and enhance sustainable business development. Also encouraging residents and businesses to spend money locally could assist in keeping the local economy healthy and maintaining investments in the local community. Because education and the economy are so closely related, there must be a commitment to sustaining and building a first class education system for citizens of all ages.

The following strategies form a foundation for the promotion and enhancement of the township's economic vitality:

- Recognize the roles of the community, schools, businesses, and the government in creating a positive environment for economic vitality.
- Provide for a mix of uses in a range of zones to promote the development of a diversity of business types, ensuring that the land uses are compatible with the Comprehensive Plan. This means that economic development should focus on highway corridors and industrial parks, and other areas designated for employment growth in the Comprehensive Plan. Support flexibility in permitted uses for commercial buildings, including non-traditional uses like restaurants and child-care centers.
- Encourage the retention and development of businesses that provide family-wage jobs and fill existing gaps in good and services, while providing incubator space for new businesses.
- Support the Bristol Township School District to maintain and enhance high-quality schools, and encourage the location of institutions of higher education to Bristol.

- Finance infrastructure in a fair and predictable manner such that no business bears an undue burden and such that Bristol maintains high quality capital facilities for all who work and live here.
- Build partnerships with the business, non-profit, and other communities to foster the township's economic vitality.
- Take specific actions, like development of a township marketing campaign that will help Bristol attract economic development commensurate with the Comprehensive Plan.

Fiscal Impacts and Capital Improvements Programming

For the past few years Bristol Township has been able to keep a balanced budget. The township has benefited from stable revenues and has started to plan short-term financing for capital expenses. Unforeseen events, however, could alter the township's financial situation. In order to plan for anticipated as well as unanticipated expenses, the township should carefully examine future trends for municipal finances, examine the underlying land use patterns that influence revenues and expenditures, and consider the development of financial planning instruments, such as a capital improvements program.

Fiscal Impacts of Future Growth

A 1994 Penn State College of Agricultural Sciences study examined the fiscal impacts of residential, commercial, industrial, and open space land uses and found that, in general, each of these land uses pays its own way when comparing municipal revenues generated to costs incurred in services.² This occurs despite the increased number of services provided by a growing municipality. Thus, in terms of municipal budgeting and finance, alternative land uses do not have a significant impact. Maintaining a balanced municipal budget is more a matter of keeping expenditures under control and taking advantage of other revenue streams than it is a matter of zoning more land for nonresidential land use.

However, when school district budgets are brought into the equation, alternative land uses do have a significant impact. Although residential land use provides a majority of overall revenues, it does not pay its own way, as the costs to educate schoolchildren are very high. (The one exception to this rule is age-restricted or senior citizen housing; this form of residential housing generates no schoolchildren and generally pays for itself). Commercial and industrial land uses provide more revenue to the school district and municipality than they generate in expenditures. Commercial and industrial land uses also provide a significant subsidy to both school districts and residential taxpayers in that none of these uses generate schoolchildren. Consequently, these land uses help keep residents' taxes low. Communities with a significant residential tax base without growth in nonresidential land uses will begin to see higher tax bills, as the revenue generated by residential development will become stagnant and may not keep up with the rising costs of education. The burden can be shifted to new nonresidential development. Thus, to help maintain a low tax burden on residents, the township should ensure that a variety of land uses are encouraged in its zoning ordinance.

Bristol Township has a mix of land uses but much of the tax revenues come from residential sources. A greater balance of residential and nonresidential uses can be planned to benefit the townships tax base and provide homes for workers. Mixed use development can provide both commercial and residential land uses in a way that will balance the costs and benefits to the township.

² Kelsey, Timothy W. *Local Tax bases and Change: The Fiscal Impacts of Alternative Land Uses*. (Extension Circular, 143) College of Agricultural Sciences, Penn State University, 1994.

Residential development will be part of the proposed Croydon train station redevelopment and Waterfront revitalization. These uses will likely be multifamily uses and be of greater density than much the housing in Bristol today and will provide more tax benefits per unit than single-family dwellings. These units will be newer and will have higher tax assessments. They will also attract smaller households and family sizes with fewer impacts on the school district.

Improvements along the Route 413 in the Town Center will enhance access and aesthetics along the 413 corridor. These improvements will make it a better place to do business for existing establishments and new commercial development will raise tax revenues.

From time to time landowners petition the township to change zoning. Zoning changes present a shift in land use policy and also a shift in fiscal situation. The township should require that any applicant for zoning change conduct a fiscal impact study to determine the impacts of a zoning change upon the township's land use and fiscal bottom line.

Future Trends in Municipal Revenues and Expenses

As the township's demographics change and development and redevelopment occur, changes can be expected in both revenues and expenditures. Below is a summary of what changes might be expected.

Revenues

The township's revenues will generally grow due to new development. Permit fees and business privilege and occupational privilege taxes will increase due to new employees and new firms moving in. These developments, however will need services, and real estate taxes and wage taxes may not increase significantly to cover the new costs. Specific taxes are described by the following text:

Earned Income Tax—Revenues from the earned income tax will stabilize as residential growth slows and residents move out of the workforce.

Real Property Tax—Revenues from the real property tax will rise as the total assessed value of property rises through new construction, rehabilitation, and renovation of older structures. New activity will be assessed at current rates.

Real Estate Transfer Tax—Revenue from transfer taxes will be dependent on the pace of development in the township. The greater the number of transfers, the more revenue from this tax can be expected.

Licenses and Permits—Permits used to pay for the inspection of construction will rise and fall with the level of construction and development. License fees will generally rise and fall with the level of business activity and population in the township.

Fines and Fees—Fees used to pay for the processing of land development applications will rise and fall with the level of development.

Miscellaneous Revenue—This revenue should generally rise as the population increases.

Expenditures

The township must spend money to meet mandates from the citizens and other governmental bodies. These expenditures are related to the basic functions of township government.

Public Safety—Expenses due to public safety will increase as the township's nonresidential development continues to grow, as there are more opportunities for interpersonal conflicts and traffic violations.

Public Works—Public works expenses will increase as the townships efforts to maintain and replace aging infrastructure continue. Roads will continue to wear down and improvements will be needed to reduce intersection conflicts and manage congestion as the region grows.

General Administration—General administration costs may rise if there is a need to hire new staff to administer the functions of the local government.

Licenses and Inspections—License and inspection costs will rise according to the pace of growth and development in the township and the aging of dwellings and other structures.

Municipal Grant Program

The recent development of the slots parlor at Philadelphia Park in Bensalem Township has presented the surrounding municipalities, Bristol Township included, with the opportunity for a new grant source. Act 71 of 2004 requires that each gaming facility contribute to the State Gaming Fund a percentage of its daily gross terminal revenue, from which a local share assessment is provided to the host and adjacent municipalities. The Bucks County Redevelopment Authority is responsible for distribution of these funds through the Municipal Grant Program (MGP). The funds are to be used for projects that promote the health, safety and welfare of the community and to lessen the impacts that the gaming facility has on the community. The funds can be used for a wide variety of public improvements including public safety equipment and infrastructure improvements. The township should use this program to fund those projects from the five-year strategic plan that most directly promote and protect the health, safety and welfare of the township.

Five-Year Plan

The township continuously updates its five-year plan to improve long range budget planning. The next step for the township is to review this five-year plan and coordinate the budget planning with this comprehensive plan. Adjusting the five-year plan if necessary will ensure that both plans work toward common goals and that capital improvements are provided in a timely manner, which serves the long-term interests of the township.

Capital Improvement Program

Because the township has limited financial resources to meet the public service needs of a growing community, little is left for major capital improvements. A method for coordinating and planning required capital expenditures is needed. An effective method of coordinating and planning expenditures is through capital improvements programming, which would also facilitate implementation of the Comprehensive Plan. As previously mentioned Bristol Township has a five-year strategic plan which should be continuously updated.

A capital improvements program (CIP) is the multi-year scheduling of public physical improvements. The scheduling is predicated on the availability of fiscal resources and the selection of specific improvements to be constructed over a span of five to six years into the future. These improvements should only include those expenditures for physical facilities, which are permanent and have relatively long term usefulness such as roads, parks, equipment and facilities. A guide for implementation of a Capital Improvements program is included in the text box on page 9.

Public expenditures called for in the capital improvements program play an important role in the implementation of the Comprehensive plan. Township expenditures for capital improvements can encourage or discourage growth in different parts of the township at different times. Coordination of sewer and water facilities, road improvements, and township facilities is essential to ensure the viability of this growth management plan. Improvements in neighborhoods such as renovating parks and repaving streets can improve property values. Township investments in infrastructure such as water and sewer and roads can encourage economic development.

Recommendation for Action—Fiscal Impacts and Capital Improvements Programming

- Amend the township zoning ordinance to require a fiscal impact study for zoning changes.
- Follow recommended procedures to develop and ultimately adopt a CIP, which will facilitate implementation of Comprehensive Plan objectives.
- Adapt current five-year Strategic Plan to include policies in the comprehensive plan.
- Prioritize actions recommended in Comprehensive Plan Update.
- Use the Municipal Grant Program funds to implement the five-year Strategic Plan.

Capital Improvement Implementation

The first step in implementing a capital improvement program is to develop a position statement, which provides direction for making funding decisions. This policy would provide a linkage between community development objectives and capital investment decisions. The following illustrates what may be contained in such a statement.

Position Statement on Capital Improvement Program

Objective:

Implement strategy of capital improvements programming, which enables the township to plan for and finance capital improvements.

Policies:

Enhance the township's economy

- Projects which generate increased tax revenue or leverage private investment for infrastructure development should be promoted.
- Promote projects that support infill development and revitalization of underutilized areas.

Protect public health and safety

- Projects to eliminate health and safety hazards must be given funding priority.

Preserve unique resources

- Funding should be provided for exceptional cultural or natural resources when threat of permanent loss is imminent.

Promote Government efficiency

- Projects which result in cost avoidance or operating savings should be funded.

Next, the finance committee and management staff should be directed by the council to submit a recommended capital improvement program to the council on an annual basis. All requests for capital improvement projects should be submitted to, and evaluated by, the finance committee and management staff which then recommend a program to the Township council for implementation as specified by the Pennsylvania Municipalities Planning Code.

A policy framework consisting of criteria to determine project funding priority and what types of projects are to be included in the capital improvement process should be developed by the managing director. It must be decided whether or not particular projects should be funded by the operating or capital budget. Only projects of sufficient size which require special attention from officials would be included in the capital improvement program. Once a basic framework for implementation is in place, work on the development of the first year program can begin. An inventory of existing facilities will assist in the indication of those portions of the townships infrastructure which require replacement, updating or expansion.

To determine the township's financial capabilities for major expenditures, a financial analysis must be done. An analysis of revenue sources and present debts will permit a determination of the debt the township can afford. Funding sources should then be selected and scheduled, a process known as financial programming.

Once a financial program is developed, project requests can be developed and submitted to the planning commission. Projects should be evaluated in terms of need and cost and judged on criteria such as cost and tax rate impact and the projects effectiveness in achieving the township's objectives and policies.

After the capital improvement program is compiled, it must be submitted to council for approval and adoption of a budget which will provide financing for it. It is beneficial for the managing director to meet with department heads and administrators to discuss details of projects so that these officials may fully understand them. A special public hearing is advisable to gauge public opinion regarding the need for proposed projects.

Once approved, the capital improvement program can be implemented by the council and managing director. Regular review of the progress of the capital projects will head off problems which may occur during implementation and aid in management of the process.

CHAPTER 11

FUTURE LAND USE

Overall Planning Issues

The most important purpose of a comprehensive plan is to provide direction for a community's efforts for future planning and development. Bristol Township is a largely urbanized community that faces many of the ill effects of inner ring suburbs – inadequate community planning, revitalization, enhancement, and funding opportunities. Township officials will continue to pull together its collective resources to address some of these shortcomings. Recent publications, such as the *Bucks County Waterfront Revitalization Plan*, *Croydon Transit Investment District Study*, and *U.S. Route 13 Revitalization Plan* have identified key opportunities and constraints for the township. Successful implementation of this Plan and other strategic plan recommendations will be a focus for township officials over the next decade and beyond.

With limited vacant land available in Bristol Township, future development will primarily be in the form of infill or redevelopment, which should be responsive to the township's natural, cultural, and historic resources. Township officials will continue to proactively identify appropriate alternatives for infill redevelopment projects that are compatible with the scale and context of their surroundings. Land use regulations will be evaluated to ensure minimal or appropriately mitigated negative impacts and promote a balance of uses that foster the overall health, safety, and welfare of the community. Various other actions to promote a balance of residential and nonresidential uses have been discussed in Chapter 4, Development Today and Projected Changes.

Future land use and development should be guided by the planning principles of "Smart Growth" and "Sustainability." These land use planning strategies are endorsed by many county and state governments, including Bucks County and the Commonwealth of Pennsylvania.

Smart growth promotes a concentration of development and diversity of uses. This approach is intended to guide development and conserve natural systems, utilizing existing infrastructure, revitalizing growth centers, and encouraging alternative means of transit such as walking and biking.

Sustainability is broad in nature and encompasses all aspects of development to preserve environmental resources for future generations. It encourages green building design in compliance with Leadership in Energy and Environmental Design (LEED) standards and the use of solar, geothermal, wind, or other on-site regenerative energy production for both public and private development projects.

Along with the implementation of these overall planning principles, there are specific areas in the township that warrant special consideration. The Special Study Areas section below describes specific policies and recommendations for each of the designated study areas. In 2002, the update of the Bristol Township Zoning Ordinance was adopted. As a result of this process, there were various planning policy changes that were implemented through strategic rezoning in portions of the township, including the creation of the Town Center overlay district along Route 413. For the purposes of this Plan, the Special Study Area policies that follow should govern future development and redevelopment. For those parcels not specifically described in, or located outside of, a designated Special Study Area the underlying zoning district will function as their respective planning policy. Any proposed subdivision, land

development, or zoning map change should be analyzed against not only the underlying zoning district planning policies but ALL relevant planning policies contained in this Plan. Subsequently, the merits of the proposal will be evaluated by township officials prior to taking action on the proposal.

Special Study Areas

In the previous 1986 comprehensive plan, the entire township was broken into individual planning areas. For this comprehensive plan update, only those areas that were deemed to require special attention are highlighted. The purpose of this section is to identify specific planning policies, public improvements, and an appropriate land use composition that will enhance the economic and social vitality of the targeted areas as well as overall community. Map 4 identifies 11 special study areas, and their individual policies and recommendations are described below.

Pennsylvania Turnpike/Interstate 95 Interchange

This study area includes the area directly associated with the Pennsylvania Turnpike and Interstate 95 interchange project. The actual interchange project; however, will be far more reaching in its influence. The construction of an interchange between the Pennsylvania Turnpike and Interstate 95 may result in increased economic activity for the Greater Philadelphia region, and the communities near the interchange. Bristol Township will serve as the focal point of the proposed interchange since the actual ramps will be located within its borders. According to *The Value of Connections: Economic Impact of the Proposed Pennsylvania Turnpike and Interstate 95 Interchange* (2000), the construction of the interchange, when compared to not building the interchange, could provide an infusion of new construction dollars into the economy; reduce the cost of doing business through a more efficient transportation network; and increase the attractiveness of Lower Bucks County as a business location and tourist destination.

The interchange between the PA Turnpike and I-95 has been in the planning stages for several decades, but federal funding restrictions and potential environmental impacts have delayed its approval for construction until recently. Similar to the opening of the southbound I-95 ramp to Route 413 in the late 1990's, the turnpike/I-95 interchange project is expected to stimulate development and redevelopment in the township, particularly in the Route 413 corridor. The Route 413 exit from I-95 will be the first exit to the south of the proposed interchange. The interchange increases the value of the existing Route 413 ramp by adding new east-west turnpike access to the improved southbound access from I-95. The township should also benefit from reduced traffic growth on key local roads, reducing local congestion and increasing the area's attractiveness as a business environment. Lastly, Bristol Township's residents will have greater connections to job opportunities throughout the region via the newly improved highway links available from the interchange and potentially greater resident employment possibilities with new and expanded business growth.

Bristol Township is focused on utilizing the Bucks County Enterprise Zone designation. The proposed connection of the Pennsylvania Turnpike and I-95 will provide new and improved access to the Bucks County Enterprise Zone via Routes 413 and 13 as a means to increase investment and interest in its existing industrial parks and properties. From the Route 413 exit ramp at I-95, there will now be improved access to markets to the east and west via the Pennsylvania Turnpike. Existing properties will increase in value due to increased demand for locations closest to the Turnpike/I-95 entrances. The improved road network, however, will increase the economic competitiveness within the entire region. While there will not be direct frontage access on the Turnpike or I-95 in the vicinity of the new

interchange, the interchange project opens up new possibilities for existing buildings and underutilized properties, especially along Routes 413 and 13. Older warehouses and industrial facilities will have new potential for redevelopment as flex space, usable by either office or light industrial users.

FIGURE 11-1
Future Pennsylvania Turnpike and Interstate 95 Interchange



Staging of Pennsylvania Turnpike/Interstate 95 Project

Project Stage 1 (2008–2014) includes building a high-speed interchange that directly connects the Pennsylvania Turnpike and Interstate 95 in Bucks County, a new mainline toll plaza, and mainline widening.

Project Stage 2 (after 2014) includes the remaining six ramp movements of the new interchange and completion of the mainline widening.

Project Stage 3 (after 2016) brings an additional bridge over the Delaware River parallel to the existing PA Turnpike bridge.

Source: PA Turnpike/I-95 Interchange Online website

The Value of Connections plan indicates there is a need for effective planning and zoning resulting from the new interchange, which will improve the competitiveness of local communities in the project area. Any strategy that takes into account current and future trends in the office, retail, hospitality, and industrial sectors may benefit through increased demands for goods and services.

Bristol Township officials had the foresight to seize the opportunity to plan for the implementation of the future interchange. The 1986 comprehensive plan, recommended (and later incorporated as an overlay

district in the 2002 zoning ordinance update) a Town Center District that would provide a focal point of business and social activities and capitalize on the convenient access from the new interchange. Township officials are interested in further refinement of this district to provide a more attractive business environment as discussed in the Town Center Overlay District discussion below.

Other proposed projects that will benefit from the enhanced access from the new interchange will include the Croydon Transit Revitalization Investment District along Route 13 and the Rohm and Haas waterfront development, which are discussed in more detail below.

As discussed in *The Value of Connections* plan, providing opportunities for cooperative marketing could enhance or support economic growth. The build up to construction of the interchange offers an opportunity to develop joint economic development and planning strategies, touting and marketing the transportation and market access connections of the area.

Waterfront Area

As shown in Map 4, Bristol Borough divides the township waterfront area into two segments, north and south. Each segment has its own specific concerns and issues and as such, these segments are discussed separately.

The southern segment of the waterfront area lies between Neshaminy State Park and Bristol Borough with River Road acting as its northern boundary with the Croydon special study area. The land use in this area is generally nonresidential with utility, heavy industrial, and light industrial uses making up the majority of land area. This portion of the study area includes the undeveloped portions of the Rohm and Haas property.

The northern waterfront area lies between boundaries of Bristol and Tullytown boroughs. The land use in this portion of the study area is largely made up of single-family detached dwellings. There are two large nonresidential uses located at the far eastern end of the study area, the first being the Aqua Pennsylvania property which has a water storage tank, recreational fields, and marina facilities and the second being the Riverside Industrial Complex.

The *Bucks County Waterfront Revitalization Plan* (2005) is intended to provide a vision for the entire lower Bucks County Delaware River waterfront and thus provides the basis for the recommendations of the *Bristol Township Comprehensive Plan Update*. The *Bucks County Waterfront Revitalization Plan* articulates a community-based vision that will guide future revitalization efforts along lower Delaware River waterfront communities, including Bristol Township. The plan envisions “opportunity areas” for each municipality that show detailed concept plans for key areas in the study area.

Waterfront South—Rohm and Haas Property

The Rohm and Haas property plays a significant part in the *Bucks County Waterfront Revitalization Plan*. The Bristol Township Opportunity Area (Rohm and Haas Property) of the *Bucks County Waterfront Revitalization Plan* envisions the comprehensive redevelopment of the Rohm and Haas property that would create a large amount of high-quality space for office, flex, commercial, and residential development, taking advantage of this superior riverfront location. Mixed use areas along the Delaware River and in the center of the site would include commercial/office, flex, and residential development.

Rohm and Haas, located at the intersection of State Road and Route 413, is one of the largest landowners in the township with over 880 acres of property. The company once employed over 3,000 workers, but since downsizing its operations over the last few decades, it now employs only about 400 workers. Recently, the company has begun marketing about 150 acres in the Maple Beach area of the township, which is located along the Delaware River. The company is seeking a commercial or industrial user, as the site would require some environmental cleanup. Rohm and Haas would also like to provide the community with long-term tax and employment benefits that only a nonresidential user of the property would be able to provide.

But, in addition to potential contamination issues, there are other obstacles to the site's development. The site is zoned R-1 Residential, which only permits residential and institutional uses. A change in zoning would be needed for an applicant wishing to use the property for commercial or industrial uses. Maple Beach is bounded by 10-foot-high levees that separate the shoreline from the remainder of the property. Although the Federal Emergency Management Agency (FEMA) flood insurance map identifies this area as being protected from the 100-year flood by the levees located along the edge of the river, the map also notes that the structure could be overtopped by a very large flood or fail in other circumstances. Another concern for this property is the heavy traffic that occurs along this section of the Route 413 corridor throughout the day. The Burlington–Bristol Bridge is a key transportation connection between New Jersey and Pennsylvania and a potential developer of the Maple Beach property must address the major traffic impacts that would occur with development along this corridor.

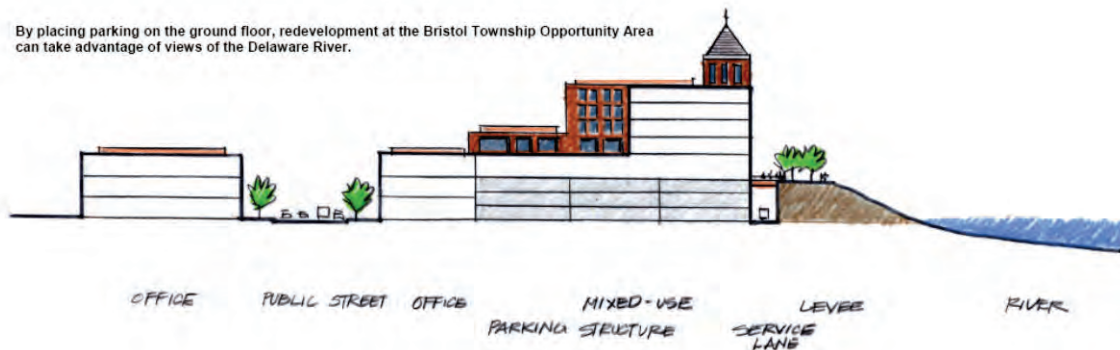


Mixed-use development is proposed for the Maple Beach property.

The Waterfront Revitalization Plan also envisions a significant gateway feature that would create an attractive entrance into Bristol Township from the Burlington–Bristol Bridge. The areas around Otter Creek and Hog Run would be restored to a more natural condition, with substantial areas of wetlands reservation. Public open space will be provided along the river's edge, and a riverwalk would run along the river, connecting the site to Bristol Borough and points south. To carry out this vision of the riverfront, the township is in the process of creating a mixed-use overlay zoning district that would permit residential and commercial uses and include provisions encouraging walkability and architectural design controls. At the completion of this Plan a draft ordinance amendment was under review by the township. The plan also recommends the township acquire key open space parcels that will be important in defining the edges of individual projects and enhancing the overall development of the area.

Figure 11-2 below illustrates the design concept envisioned in the Waterfront Revitalization Plan for the Rohm and Haas property.

FIGURE 11-2
Design Concepts for Waterfront South Area



Source: *Bucks County Waterfront Revitalization Plan* (2005)

Thus, in considering the future direction of the Rohm and Haas property, the township must balance the traffic, environmental, and quality-of-life concerns that may occur with a large redevelopment project with the possibilities conceived in the *Bucks County Waterfront Revitalization Plan*.

Another area that warrants attention in the Waterfront South area is the Minot Avenue neighborhood. This neighborhood of 26 single-family detached homes is prone to flooding from the Delaware River. The township commissioned a study in 2005 to find a solution to the flooding problem. The study recommended that a pumping system be installed in order to remove floodwaters from the neighborhood. The township should consider the recommendations of the study, however, there should be an examination of the cost-benefit of this solution. Another possibility may be the voluntary acquisition of the flood prone properties.

Waterfront North

A second opportunity area, the Bristol Borough and Township Opportunity Area, is identified at the eastern border of Bristol Borough between US 13 and the Amtrak rail line. Commercial development would occur along US 13 while the remainder of the site would be dedicated to flex and warehouse uses. The plan suggests that the Delaware Canal, locks and bump bridges be restored to make the canal navigable. This portion of the study area is further discussed in the Route 13 Corridor East section.

The *Bristol Township Municipal Open Space Plan* (2000) identifies the Paper Mill Village Woods as a site desirable for open space protection and possibly for future riverfront public access. This 25-acre site is located at the far eastern end of the study area and is comprised of woodlands and wetlands on the Delaware River. Aqua Pennsylvania and the Riverside Industrial Complex, Inc. both own portions of the site.

The *Bucks County Waterfront Revitalization Plan* also devises specific recommendations to improve the study area and make it more attractive to residents, businesses, and visitors. Six themes organize these recommendations and serve as goals for the plan:

- Enliven the river's edge by improving waterfront access

- Incorporate design with development to improve the attractiveness of the area and foster its renaissance.
- Enhance the economy by fostering redevelopment of underutilized lands and buildings.
- Expand mobility and accessibility to and within the study area.
- Foster environmental sustainability of the Delaware River and its tributaries.
- Reinforce sense of place and identity.

Under each theme a set of recommendations is identified to guide future development and preservation efforts. For example, the second theme listed above focuses on the importance of design in bringing people and investment to the waterfront. One of the plan's primary design recommendations is to extend a community's street grid all the way down to the river. Extending the street grid will help maintain a visual and physical connection between communities and the river. Another recommendation is to establish "address streets," streets that are primary travel routes to or within a community. Streets such as State Road and River Road should be provided with design guidelines to foster a pedestrian-friendly environment with buildings and infrastructure designed at a human scale.

Neshaminy Creek Corridor

With the renewed interest in development and redevelopment on the Delaware River waterfront it is safe to assume that there will also be pressure for development in the Neshaminy Creek Corridor. For these reasons, it is prudent to examine the current planning policies for and the development potential in the corridor.

As shown on Map 4 the Neshaminy Creek Corridor forms the western boundary of the township from the Delaware River to the northern boundary of the township. The Corridor separates two highly urbanized townships, Bristol and Bensalem.

The land use in the corridor from the Delaware River northward to US Route 13 consists mainly of nonresidential uses that are marine in nature, including several marinas and boat repair facilities. The former Jack's Marina property, a 23-acre vacant parcel, is the largest privately owned parcel with development potential. Overlook Park, located just south of the rail lines, is a 16.8-acre undeveloped park owned by the township.



Neshaminy Creek.

North of US Route 13 the land use changes almost exclusively to residential uses. Most of the residential uses are single-family detached dwellings along the creek and in the villages of Newportville and Fergusonville. The Glen Hollow apartment complex at the intersection of Newport Road and Newportville Road is also within the corridor study area. The nonresidential uses in the area include a marina located just north of US Route 13, the Keystone Industrial Park, and commercial uses in Newportville.

Two of the township's previous planning efforts, the *Bristol Township Municipal Open Space Plan (2000)* and the *Bristol Township Park and Recreation Plan (1997 Update)*, recognized the opportunities that the Neshaminy Creek Corridor could provide for recreation and nature study. Both plans recommend the

development of an active and passive park, referred to as the "Riverside Preserve Sites," along the Neshaminy Creek north of Ford Road utilizing property owned by the township and county. Since the adoption of these plans, approximately 2 acres near Hazel Street has been acquired and designated as Riverside Park. Riverside Park is a special use park intended to be used for sight seeing and fishing. Additional property in the floodway and floodplain should be acquired to provide a park facility with fields for organized sports. The park should also respect the historic context of the area as a family gathering place for picnics and provide passive recreation areas for fishing, sitting, and a canoe launch using the attractive natural beauty of the Neshaminy Creek.

In recent years a series of development plans for the former Jack's Marina property have been submitted to the township. This 34-acre site is located just above Neshaminy State park and is environmentally constrained for development due to the presence of the floodplain and wetlands. A 160-unit residential development is proposed for this site, but preliminary plan approval has not been granted at the completion of this Plan, due in part to sewer capacity issues. If and when this proposal is withdrawn, the township may have an opportunity to acquire this site for open space and/or public recreation purposes.

Overlook Park is a 16.8-acre undeveloped park owned by the township located just below the rail lines. This site was identified in the *Natural Areas Inventory of Bucks County* (1999) as a priority 2 site. Priority 2 sites encompass 33 sites of county-wide and in some cases statewide significance due to their overall quality and the diversity and importance of the resources they contain. According to the *Natural Areas Inventory* this site is classified as a wild rice-water-hemp tidal marsh. This is an important habitat for rare plants, birds, and other wildlife. The marsh is bordered on the east by very disturbed low woods in which considerable dumping has occurred in the past. The *Natural Areas Inventory* suggests that the tidal marsh and associated wetlands be protected from riverbank development or further attempts to fill and that clean up of the wooded land adjacent to the marsh would greatly enhance the site.

The Neshaminy Creek Corridor study area is also part of a regional concept for a link park that would extend from the Delaware River to Peace Valley County Park in New Britain Township. This concept has been identified in the *Bucks County Park and Recreation Plan (1986)*. Link parks are linear parks along stream valleys and other natural corridors and are appropriate settings for most trail based recreational activities such as hiking, jogging, bicycling, and horseback riding. Multipurpose trails should be incorporated into the design for any development that takes place along Neshaminy Creek in order to contribute to the creation of the link park.

Croydon

The Croydon special study area is located in southwestern Bristol Township and as shown in Map 4 is bounded by the waterfront special study area, the Neshaminy Creek special study area, Newport Road, and the boundary with Bristol Borough. The residential neighborhoods of Croydon Manor, Croydon Acres, Croydon Heights, and Maple Shade are included in this study area. Improvements to U.S. Route 13 and the commercial area on U.S. Route 13 in the vicinity of the Croydon train station are both discussed in previous sections.

The land use in the Croydon special study area is primarily residential with single-family detached dwellings. Multifamily residential uses include the 615-unit Glen Hollow apartment complex located on Newport Road. Industrial uses are found along River Road including the Rohm and Haas facilities and the Riverview Industrial Park. Commercial uses are found along State Road and are mostly neighborhood

type businesses serving the study area. The special study area is also home to various institutional uses including two elementary schools (Maple Shade and Mary Devine). There are also vacant residential lots scattered throughout the study area.

Portions of the Croydon special study area are a focus of the Croydon TRID study which is discussed in detail in the Transportation section. As of the time that this Comprehensive Plan Update was completed the Croydon TRID study was still in production. While the TRID study has not been completed as of the completion of this *Comprehensive Plan Update*, it is assumed that this planning effort and the planned improvements for the Croydon train station and U.S. Route 13 will result in increased development and redevelopment in the Croydon area. New residential development should take the form of those recommended in the Land Use Characteristics and Development Trends section which included Traditional Neighborhood Development, Transit-Oriented Design, and Infill Development. To capture the potential benefits of this increased development and redevelopment the township's land development regulations should be brought in line with the planning that has taken place.

The anticipated activity in the Croydon special study area should also conform to the recommendations from the *Bucks County Waterfront Revitalization Plan*, which as mentioned above, calls for the development of address streets, riverfront corridors and municipal gateways to promote the waterfront. The riverfront corridor and municipal gateway concepts, as put forth in the *Bucks County Waterfront Revitalization Plan*, are to be somewhat consistent across all waterfront communities. At this time the waterfront communities have not taken any steps to define how the riverfront corridors and municipal gateways will be designed. Therefore, consideration should be given to only moving forward with the elements of these concepts that are not dependent on other communities.

The design elements suggested for address streets can be implemented without any guidance from other municipalities and therefore are something that can be initiated immediately. Address streets should include design elements including street trees and accent plantings, special paving, continuous sidewalks, pedestrian amenities such as street furniture and buffer zones, wayfinding and signage features, architectural guidelines, lighting for street and sidewalks, minimization of curb cuts, placing of overhead utilities underground or behind buildings, bicycle lanes, and the screening of unsightly areas. Address streets in the Croydon special study area are State Road, Cedar Avenue and River Road.

Levittown/Fairless Hills

The neighborhoods of Levittown and Fairless Hills house a majority of the township's residents. This area is predominately single-family residential and is essentially built-out. These neighborhoods were built around the same time period, between 1950 and 1960, in response to the construction of U.S. Steel's Fairless Works steel plant.

The neighborhoods of Levittown and Fairless hills were built using the planning theories of architect Frank Lloyd Wright and his concept of the "Broadacre City." This concept envisioned a mile-square grid of primary thoroughfares with residential neighborhoods separated from commercial areas. Each mile-square neighborhood grid would have its own community facilities including parks, schools, and places of worship. The assumption was that residents would travel by car to work and for shopping and entertainment purposes. In theory and in practice these concepts were shown to be successful as Levittown and Fairless Hills were and still are viable neighborhoods.

However, this is not to say that there have not been problems associated with these developments. Over time it has become apparent that the stormwater management system has become less effective and may not have been properly planned during the development of the special study area. Ponding of water is a frequent issue in the neighborhoods perhaps caused by the filling in of drainage ditches due to lack of maintenance or from homeowners simply constructing additions or accessory buildings over them. In addition, waterways which serve to convey stormwater, such as Black Ditch Creek, Otter Creek, and Queen Anne Creek, appear to have less capacity due to erosion and the presence of debris. The Army Corps of Engineers has studied the Black Ditch Creek and recommended deepening and widening of the creek along with implementation of riparian buffers. These issues should be studied further and recommendations should be made to correct these problems.

Another issue that can be traced back to the original concept of these developments is the limited connections between residential neighborhoods and the commercial centers that serve them. As mentioned previously it was assumed that residents would primarily travel by car to make any trips outside of their neighborhood. While this may be true, it is desirable for people to have a choice in their mode of transportation. It is a goal of this Comprehensive Plan Update to provide a community that is accessible to bicyclists and pedestrians. One specific recommendation from the Transportation and Circulation section is for streetscape improvements to New Falls Road. These improvements would include sidewalks, shade trees, pedestrian lighting and street furniture. The township should work in conjunction with Middletown Township to provide for these improvements as they would be a benefit to both communities' residents. This project could serve as a model for improvements to other arterials in the township.

The Transportation and Circulation section also recommends improvements to the commercial areas of the township with respect to access management. The Levittown/Fairless Hills special study area contains many of the roads cited for access management improvement such as New Falls Road, South Oxford Valley Road, and Levittown Parkway.

The study area has very few vacant parcels as shown on the Existing Land Use Map. The largest vacant parcel in the study area is located at the intersection of Mill Creek Parkway and Edgely Road and is owned by PECO. The parcel has limited development potential due to the presence of an overhead electrical line corridor and the Black Ditch Creek and its associated floodplain and wetlands. The Park, Recreation and Open Space Planning Chapter recommends that the township determine if the overhead electrical line corridors are appropriate for greenways. If used as a greenway this site would become a part of a network of trails that would link to Black Ditch Park and possibly to Silver Lake Park.

Residential Opportunity Neighborhoods

As shown in Map 4 the township has two neighborhoods that are identified as Residential Opportunity Neighborhoods. These neighborhoods of Bloomsdale/Fleetwing and Venice-Ashby make up this study area. Along with the Greenlawn Park and Pacific Avenue neighborhoods, Bloomsdale/Fleetwing and Venice Ashby make up the Freedom Neighborhood I which is part of a Weed and Seed initiative. This federal program targets neighborhoods with high crime rates and seeks to improve the resident's quality of life by "weeding" out criminals through law enforcement and "seeding" the communities through social programs and community and economic development initiatives. The township is a partner in the Weed and Seed program and should continue to be a part of the activities in these neighborhoods and support the efforts of the Freedom Neighborhood I organization. In addition, the issues of vacant homes,

absentee landlords, and poor property maintenance that occur in these neighborhoods should be addressed through code enforcement, neighborhood improvement associations and township sponsored clean up days.

The Township has used its CDBG funding to fund home rehabilitation and other community improvement activities in the study area. In addition, the township's first time homebuyers program has contributed to the purchase of 28 percent of the homes in these areas over the last 15 years. The township should continue to dedicate these resources to the study area and the other Weed and Seed Neighborhoods.

Route 13 Corridor — East

U.S. Route 13 traverses Bensalem Township, Bristol Borough, Bristol Township and Tullytown Borough. This road is one of the most heavily traveled within the township, and considered the main spine for the county's officially recognized "Enterprise Zone." As such it is vital in the county's overall plan for redevelopment.

As shown in Map 4, Bristol Borough divides the Route 13 corridor into two segments, east and west, which have their own specific concerns and issues. For the purposes of this Plan, these segments will be discussed separately. The eastern segment of the Route 13 corridor lies between Bristol and Tullytown boroughs, and consists primarily of strip commercial uses.

The *U.S. Route 13 Revitalization Plan* (2004) is intended to develop a diverse, comprehensive program that serves as a model for enhancing community character, increasing transportation investment, and improving safety. This Plan supports the *U.S. Route 13 Revitalization Plan's* recommendations. The Revitalization Plan contains various recommendations for the east segment of the corridor.

There are several recommendations that suggest township officials explore potential development opportunities. For instance, promoting the redevelopment in the vicinity of the Route 13/Pennsylvania Turnpike Interchange including the Green Lane Redevelopment Area and areas north of the turnpike. Currently, the land uses in this area are predominately industrial with some vacant parcels. The Revitalization Plan suggests the construction of a unified, mixed-use development consisting of offices, hotels, entertainment facilities, and restaurants. Recent economic indicators suggest a significant slow down in residential and nonresidential development, which may affect the feasibility of a project of this nature and scale at this time. While waiting for the economy to stabilize and rebound, township officials will consider the merits of laying the groundwork for such development venture through the provision of local ordinances and regulations means that can foster a high-quality, unified master plan of underutilized properties or redevelopment of existing properties in this area. Marketing of projects to prospective developers may be part of the implementation process.

Another development opportunity area is on the northwestern side of Route 13 in the vicinity of Silvi/Edgely avenues. The area is currently a mix of underutilized commercial and vacant parcels. The Revitalization Plan recommends the construction of garden apartments in this area.

The Revitalization Plan recommends the purchase of underutilized parcels for open space expansion along the Delaware Canal State Park. Township officials acknowledge the importance of the Delaware Canal State Park and towpath as an invaluable resource, providing recreational opportunities along with key trail linkages to various areas within the township and beyond. When opportunities arise, acquiring

strategic parcels located adjacent to the park through appropriate means will not only increase the area of the park facility, but provide an additional buffer or transitional area between the park and adjacent land uses.

In addition to redevelopment and open space enhancement, several corridor improvements have been identified to enhance the aesthetics and functionality of Route 13. These improvements include landscaped median, new turning lanes, street trees, curbs, lighting, new turning lanes at appropriate locations. Pedestrian and bicycle improvements along the corridor are suggested including potential foot/bike bridges at strategic locations and safe pedestrian crossings at intersections along Delaware Canal.

Route 13 Corridor — West

The western segment of the Route 13 corridor lies between Bensalem Township and Bristol Borough and consists of a mix of commercial, industrial, and residential uses. Some of the highlighted recommendations of the *U.S. Route 13 Revitalization Plan* along the western corridor include exploring the potential redevelopment of the aging shopping center near the Croydon post office located south of Route 13 between the Amtrak/SEPTA rail line.

Corridor improvements for the western segment include installing quality fencing along cemetery and rail line), new entrance signage for residential neighborhoods, pedestrian-oriented lights, street trees, wider sidewalks, on-street parking, and improved building facades.

Similar to other designated gateways into the township, the Route 13 western gateway along the Bensalem Township border should include appropriate signage, landscaping, and lighting welcoming visitors arriving into Bristol Township.

The implementation of the Revitalization Plan is intended to produce a series of strategies that improves mobility, pedestrian safety, and general aesthetics of the area, in turn, attracting the type of investment and redevelopment that will lead to more residential, employment, and retail opportunities. Township officials will continue to work with PennDOT to ensure that recommendations from the Revitalization Plan are included in any future rehabilitation projects undertaken by PennDOT.

Newportville/Fergusonville

The neighborhoods of Newportville and Fergusonville are located between the Pennsylvania Turnpike to the north, the Neshaminy Creek to the west, and Keystone Industrial Park to the south as shown in Map 4. The historic character of these neighborhoods generally remain intact. Newportville predominately consists of single-family residences dispersed with limited community-related commercial and institutional uses such as a church, fire company, and Newportville Inn (circa 1734). Fergusonville contains single-family residences almost exclusively. Both neighborhoods contain various vacant parcels dispersed throughout that could provide additional infill development.

To preserve and enhance the historic nature of these areas, township officials will consider the feasibility of adopting historic district zoning and/or village design guidelines. These planning techniques can be used to establish appropriate building setbacks and placement on a lot while providing a vision for preferred architectural styles, building façade treatments, street tree plantings, and streetscape improvements for new development and additions. The *Neighborhood Enhancement Study, A Study of*

the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues in Bensalem, Bristol and Middletown Townships, prepared in 2002, recommends various neighborhood enhancements such as installing gas lamps at every intersection to recapture village atmosphere and providing additional parkland and/or recreational space (e.g., playground equipment and ballfields) to provide convenient recreational opportunities for area residents. The *Study* also recommends various road improvements to increase motor vehicle and pedestrian safety such as the milling and overlaying of residential streets in the study area and proposing a 4-foot sidewalk along New Falls Road from Nebraska Street to Durham Road. Channel improvements and stormwater detention is deemed necessary to address flooding in the vicinity of Queen Anne Creek. This Plan supports these recommendations of the *Neighborhood Enhancement Study*.

3M/Airport Road

This study area is located between Green Lane to the west, Edgely Avenue to the east, Black Ditch Creek to the north, and approximately the Delaware Canal State Park to the south as shown in Map 4. This study area, the former 3M Airport and 3M Industrial Park, now consists of three separate but adjacent industrial parks—Edgely Industrial Park, Tremont Industrial Park, and Bristol Industrial Park. The zoning consists of the M-1, Light Manufacturing District and the P-1, Planned Industrial District. Businesses in this location consist mostly of smaller manufacturers, contractor space, and warehousing.

In the northeastern portion of the study area, along both sides of Hartell Avenue adjacent to these industrial parks, there was once an older residential neighborhood that has been entirely converted to nonresidential uses (i.e., industrial and commercial), which is consistent with the underlying zoning consisting of M-1, Light Manufacturing District. The adjacent block directly to the northeast, along both sides of Woodside Avenue, is zoned R-1 and R-2 Residence districts and consists of single-family residences that are part of the original residential neighborhood that has been preserved.

In the southeastern portion of the study area (northwest of Airport Road and Bristol Industrial Park) is the other portion of the older residential neighborhood that has been allowed to convert to nonresidential uses. This conversion is consistent with the current underlying zoning consisting of the M-1, Light Manufacturing District and M-2, Heavy Manufacturing districts. While the majority of the parcels in this portion of the study area contain industrial and commercial land uses, there are still existing pockets of single-family residential uses. As a result, township officials will continue to monitor the area to identify potential land use conflicts (e.g., noise, light, vibrations). If the priority is given to preserve the existing nonconforming residential uses in this area, additional measures may be necessary. While the zoning ordinance currently contains comprehensive buffer yard planting requirements, township officials may need to enforce existing nuisance ordinances or provide additional buffering/screening or future use restrictions.

As previously discussed, the Residential Opportunity Neighborhood study areas of Bloomsdale and Fleetwing are located along the southwestern portion of this study area. Many of these residents are low income wage earners with high school (or lower) education levels. To address this situation, township officials will encourage employers within adjacent 3M Industrial Park to hire and train residents of all Residential Opportunity Neighborhoods. The hope is to develop a resident labor force employment program to develop their knowledge and skill sets, enabling them to become economically self-sufficient and an asset to the community.

Town Center Overlay District

In August 2002, Bristol Township completed their zoning ordinance update and a key component was the creation of the Town Center Overlay District. The future PA Turnpike/I-95 interchange provides the township with an opportunity to capitalize on the marketability of the Town Center as a premier business location. As shown in Map 4, the approximate boundary of the study area is the segment of Route 413 between the Pennsylvania Turnpike to the north and Bristol Borough municipal border to the south. Properties in the Town Center Overlay District either have direct frontage onto Route 413 or are located nearby. The Town Center Overlay District is an overlay applicable to the C, Commercial, CN Neighborhood Commercial, P-O, Professional-Office Commercial, M-1 Light Manufacturing, R-1 Residence, R-2 Residence, and the R-3 Residence districts in the Route 413 corridor area. The purpose of the overlay district is to provide for the development of office and conference space, hotels, and other related uses along the Route 413 corridor, which serves as a gateway to the township.



Town Center District along the Route 413 corridor.

Since the creation of the Town Center Overlay District, streetscape improvements have been implemented that include sidewalks, street trees, ornamental street lights, and township pride banners. To enhance the marketability and appearance of the Town Center area, township officials will review the existing overlay district regulations and design standards to determine if changes are warranted that may provide additional flexibility for prospective developers. For instance, the maximum building height for the overlay district is currently 35 feet.¹ Township officials are willing to relax this requirement by allowing a greater building height closer to the side yard setbacks. The minimum front yard setback is 40 feet for the overlay district; however, a reduction in this requirement would allow the buildings to be placed closer to the road and parking located to the side and rear of the buildings. Providing a “build to line” or providing a minimum and maximum front yard building setback is a zoning technique that can be used to restrict the location of buildings on a lot. This may be useful in achieving the township’s goal of eliminating extensive parking lots that are visible from Route 413.

One of the primary goals of the study area is to create a unified development scheme with appropriate access management along Route 413, which serves as a major arterial through the township. Currently, the Town Center Overlay District contains building design guidelines. The zoning ordinance stresses that every effort should be made to adhere to these guidelines so that future development along the corridor will be uniform appearance. Township officials may wish to explore the feasibility of expanding these design guidelines to provide more detailed descriptions and illustrations.

¹ The Town Center Overlay District permits the 35-foot maximum building height to be increased by 1 foot for each foot by which the width of each side yard is increased beyond the minimum side yard requirements up to a maximum height of 50 feet.

To maximize the potential redevelopment of the Town Center area, township officials will work with groups such as the Bucks County Redevelopment Authority to target underutilized lands for redevelopment. Any redevelopment of this study area should be sensitive to adjacent residential areas to minimize potential negative conflicts and land use impacts.

Northern Gateway

This study area is located north of the Pennsylvania Turnpike, and south of the Middletown/Bristol townships municipal border along Route 413 as shown in Map 4. The majority of the uses in this study area are commercial, which is consistent with the underlying commercial zoning district. The Town Center Overlay District lies directly to the south, beginning on the opposite side of the Turnpike. Even though Town Center Overlay District is intended to serve as the gateway to the township, its borders fall short of the actual municipal border with Middletown Township to the north. Furthermore, unlike the Town Center District to the south, which has unified streetscape improvements, this portion of Route 413 between the Town Center Overlay District and the municipal border with Middletown Township is unappealing.

Similar to the other identified gateways, township officials will provide welcome signage in conjunction with landscape and lighting that will mark the northern entrance into Bristol Township. To address the appearance along this portion of the Route 413 corridor, township officials will identify appropriate building scale, setbacks, and façade treatments that will complement the Town Center Overlay to the south. Building design standards similar to those in the Town Center area may be prepared to enhance the architectural unity of the northern gateway area.

Special Study Areas Summary

Several plans and studies that are discussed above collectively have significant development implications on Bristol Township. Depending on the timing of construction, several large-scale developments proposed in these plans and studies may create a competing environment for residential and nonresidential construction within the township, notwithstanding the potential competing interests with proposed regional projects. Certain projects may not be feasible within the 10-year timeframe of the planning period of this Plan. Plans and studies may also differ in detail and scope than a previous study for the same project area. For instance, the *Croydon Transit Investment District Study* and the *U.S. Route 13 Revitalization Plan* differ in the project's intensity and plan details. However, ideas developed in *Croydon Transit Investment District Study* completed after the completion of the *U.S. Route 13 Revitalization Plan*, have evolved and dovetailed into the more comprehensive vision for the Croydon area. Based upon changing market conditions, township officials will continue to evaluate the feasibility of these projects and determine their priorities for implementation.

Summary of Recommended Actions

Overall Planning Issues

- Encourage smart growth and sustainability for future development through the use of “green design” such as LEED certification, the use of porous paving, green roofs, rain gardens, and other appropriate best management practices (BMPs).
- Implement appropriate recommendations of this Plan and other strategic plans (e.g., *Bucks County Waterfront Revitalization Plan*, *Croydon Transit Investment District Study*, and *U.S. Route 13 Revitalization Plan*) over the next decade and beyond.
- Continue to proactively identify appropriate alternatives for infill redevelopment projects that are compatible with the scale and context of their surroundings.

Special Study Areas

Pennsylvania Turnpike/Interstate 95 Interchange

- Ensure that the township's land use regulations are consistent with current and future trends in the office, retail, hospitality, and industrial sectors to facilitate development associated with the Pennsylvania Turnpike/Interstate 95 Interchange.
- Provide opportunities for cooperative marketing of local businesses to support economic growth.

Waterfront Area—North and South

- Use the *Bucks County Waterfront Revitalization Plan* as the guiding document for future land use and development of Bristol's waterfront.
- Implement a mixed-use overlay zoning district for the Rohm and Haas property.
- Prepare a study that evaluates the alternatives for the Minot Avenue neighborhood. The study should include a cost-benefit analysis to support any recommendations.

Neshaminy Creek Corridor

- Acquire the former Jack's Marina property if current development proposals are not carried out.
- Improve and enhance Overlook Park by protecting the tidal marsh and wetlands from riverbank development and removing man-made debris from site.
- Incorporate multipurpose trails along the Neshaminy Creek as proposed in the *Bucks County Park and Recreation Plan*.

Croydon

- Amend the township's land use regulations to implement recommendations of the Croydon TRID study.
- Implement recommendations from the *Bucks County Waterfront Revitalization Plan* related to address streets, riverfront corridors, and municipal gateways.

Levittown/Fairless Hills

- Prepare a study to address flooding and stormwater management throughout the study area.
- Partner with Middletown Township to make streetscape improvements to New Falls Road.
- As part of a townshipwide study on access management issues focus on improvements to New Falls Road, South Oxford Valley Road, and Levittown Parkway.
- Explore the possibility of incorporating portions of the PECO property into the existing township greenway.

Residential Opportunity Neighborhoods

- Continue to support the activities of the Freedom Neighborhood I, neighborhood improvement associations, and the Weed and Seed initiative.
- Consider increased code enforcement efforts and sponsorship of clean up days.
- Continue to utilize the township's CDBG funds for home rehabilitations and other community improvement activities and the first-time homebuyers program for down payment assistance in the study area.

Route 13 Corridor—East and West

- Use the *U.S. Route 13 Revitalization Plan* as the guiding document for future land use and development in the corridor.
- Continue to work with PennDOT to implement recommendations of the *U.S. Route 13 Revitalization Plan*.
- Promote redevelopment in the vicinity of the Route 13/Pennsylvania Turnpike Interchange with mixed-use development consisting of offices, hotels, entertainment facilities, and restaurants. Consider the provision of local ordinances and regulations that can foster a high-quality, unified master plan of this area.
- Acquire underutilized parcels for open space expansion along the Delaware Canal State Park.
- Establish a gateway feature along the Bensalem Township border to include appropriate signage, landscaping, and lighting.

Newportville/Fergusonville

- Consider adopting historic district zoning and/or village design guidelines for the study area.
- Implement recommendations of the *Neighborhood Enhancement Study, A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues in Bensalem, Bristol, and Middletown Townships*.

3M/Airport Road

- Continue to monitor the area for land use changes and to identify potential land use conflicts.
- Encourage employers within the 3M Industrial Park to hire and train residents of the Residential Opportunity Neighborhoods.

Town Center Overlay District

- Review existing overlay district regulations and design standards to determine if changes are warranted that may provide additional flexibility to developers.
- Consider expanding the design guidelines to provide more detailed descriptions and illustrations.
- Work with the Bucks County Redevelopment Authority to target underutilized lands in the study area for redevelopment.

Northern Gateway

- Establish a gateway feature along the Middletown Township border to include appropriate signage, landscaping and lighting.
- Consider implementing an overlay district similar to and complimentary to the Town Center District. Appropriate building scale, setback, and façade treatment regulations should be prepared to enhance the architectural unity of the study area.

CHAPTER 12

PLANNING COMPATIBILITY

Section 301(a) of the Municipalities Planning Code requires the following as elements of a comprehensive plan:

- (4.1) A statement of the interrelationships among the various plan components, which may include an estimate of the environmental, energy conservation, fiscal, economic, development, and social consequences on the municipality.
- (5.0) A statement indicating that the existing and proposed development of the municipality is compatible with the existing and proposed development and plans in contiguous portions of neighboring municipalities, or a statement indicating measures taken to provide buffers or other transitional devices between disparate uses, and a statement indicating that the existing and proposed development of the municipality is generally consistent with the objectives and plans of the county comprehensive plan.

This chapter of the Plan provides a discussion regarding the interrelationships among various plan components. It also includes an analysis of the relationship between existing land uses; zoning and planning for future development and existing land uses, zoning, and planning for future development in neighboring communities. It compares land use and planning in the township to the county's objectives and plans for development.

Relationship Among Plan Components

Throughout the preparation of this Plan, continual 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 were produced with the recognition that they are dependent on and interrelated with one another. For example, the chapters on transportation, community facilities, and natural resources all contain recommendations that are replicated in the chapter on economic vitality. The recommendations in the transportation, community facilities, and natural resources chapters are meant to improve quality of life, which in turn is a central theme to the economic development chapter. The transportation chapter makes central the connection between transportation and land use. Its recommendations involve providing multimodal forms of transportation including pedestrian and bicycle facilities that can also be used for recreation and can complement 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, shapes future land use planning.

This Plan is intended to promote and protect the public health, safety, and welfare of the township. The stated objectives and policies are designed to achieve those general purposes. Various plan components provide background information and guidelines to assist in the achievement of stated objectives. This Plan is also intended to provide the framework upon which more detailed or complementary studies can be prepared, reviewed, or revised when deemed appropriate.

Compatibility with Surrounding Municipalities

It is important that township officials be aware of development patterns in adjacent communities and have an understanding of the policies and objectives described in comprehensive plans of surrounding municipalities. Land use decisions in one township or borough can substantially affect conditions in surrounding areas and can frustrate the ability of neighboring municipalities to achieve their planning goals. It is also valuable to review the county comprehensive plan not only to identify compatible and incompatible elements but also to employ or adopt county planning policies and techniques that could be useful to the township. Prior to the adoption of this update to the comprehensive plan, draft copies were sent to the county, the contiguous municipalities, and the school district for review and comment as required by state law.

The township borders five municipalities including Bensalem, Middletown and Falls townships, and Bristol and Tullytown boroughs. Each of these townships and boroughs has a comprehensive plan and a zoning ordinance that are discussed below.

Bensalem Township

Neshaminy Creek forms the border between Bensalem and Bristol townships. At the southern end of the border is where Neshaminy Creek meets the Delaware River. Neshaminy State Park spans the creek at this point and has about one-third of its 330 acres in Bristol Township on the opposite side of the creek. The state park is zoned IN Institutional, which permits a variety of institutional uses including educational, religious, and outdoor recreation uses among others. North of the state park is an industrial area separated from Neshaminy Creek by a narrow one-lot deep strip of single-family residential development. This residential development is zoned R-A Rural Residential which is intended to maintain existing agricultural, recreation, conservation and open space uses on lots of at least one acre. The industrial area is zoned L-I Light Industrial which permits light, high technology or precision manufacturing uses and G-I General Industrial which permits heavier industrial and related uses.

Continuing north along the Neshaminy Creek to US Route 13, the mix of neighborhood commercial and retail uses that are found in Croydon continues into Bensalem Township along the US Route 13 corridor. This area has a mixture of zoning districts including G-C General Commercial, L-I Light Industrial, R-1 Residential, and A-D Apartment. The R-1 Residential district is primarily a single-family detached dwelling district with a minimum lot area of 12,000 square feet. The A-D Apartment district allows for apartment buildings at a maximum density of six dwelling units per acre.

The land use north of US Route 13 is almost exclusively residential and made up of a variety of dwelling types including single-family detached, townhouses, and multifamily buildings. The zoning districts of this area include R-1 Residential, R-A-1 Residential, and R-3 Townhouse. The R-A-1 Residential district is intended to provide low to medium density single-family detached housing on lot areas of at least 20,000 square feet. The R-3 Townhouse district permits townhouse developments at a maximum density of four dwelling units per acre.

The township generally exhibits compatible zoning and land use along the border while any impact on land uses in Bristol Township are mitigated due to Neshaminy Creek and its floodplain acting as a buffer.

The *Bensalem Township Comprehensive Plan* was adopted in September 2002. The Bensalem plan recommends that existing neighborhoods be protected from incursions by incompatible land uses or

changes in density. A greenway is envisioned along Neshaminy Creek with the cooperation of neighboring communities. The Bensalem plan also recommends cooperation with neighboring municipalities on floodplain issues.

Middletown Township

Middletown Township abuts Bristol along Zimmerman, New Falls, Woodbourne, and Wistar roads. Along Zimmerman Road are primarily single-family detached dwellings with the exception of a vacant 40-acre parcel owned by the Pennsylvania Turnpike Commission at its western end and a commercial use at its intersection with Durham Road. The Pennsylvania Turnpike Commission property was acquired for an earlier design of the PA Turnpike/I-95 project and is to be used as a wetland mitigation site. The zoning districts on Zimmerman Road include C Commercial, MHP Mobile Home Park, R-1 Residence and R-2 Residence. The C Commercial district permits general retail and commercial uses on lots of at least 20,000 square feet. The MHP Mobile Home Park district allows for the creation of a planned community of mobile homes or an office campus. The R-1 Residence and R-2 Residence districts are intended for the expansion of urban-type residential development and allow single-family detached dwellings, buildings for public worship, agricultural uses, and educational institutions among other uses on lots of 15,000 square feet and 10,000 square feet respectively.

Land use along New Falls Road primarily consists of single-family detached dwellings in Levittown neighborhoods which are zoned R-2 and described above. Concentrations of commercial uses at the major intersections of Route 413, Bristol-Oxford Valley Road, and Woodbourne Road/Edgely Road (Five Points) are zoned C Commercial and are also described above. Open space and recreation uses along New Falls Road include Frosty Hollow County Park, located adjacent to the commercial area near Route 413, and the greenbelts associated with Mill and Queen Anne creeks. These areas are zoned OR Open Recreation which permits recreation, agricultural, and nature and conservation education uses.

Once the boundary reaches Woodbourne Road it follows the road centerline until reaching Queen Anne Creek where it briefly follows the creek and then follows the rear property lines of the homes on Stanford Drive in Wistarwood neighborhood until reaching the Falls Township Boundary on Wistar Road. The land uses along Woodbourne Road include single-family detached dwellings found in the Levittown neighborhood of Cobalt Ridge, recreation, medical and professional office buildings, places of worship, social and fraternal organizations, commercial uses and garden apartments. The zoning districts in this area include OR Open Recreation R-2 Residence, and P Professional which permits offices, medical facilities, and educational, religious, and philanthropic institutions.

The *Middletown Township Comprehensive Plan* (1994) shows the future land use of the aforementioned areas as being consistent with the existing zoning. The future land use plan shows the MHP Mobile Home park zoned parcel designated as Mobile Home Park, the residentially zoned parcels designated as "Suburban Residential," the C Commercial zoned parcels as "Commercial," the OR Open Recreation zoned parcels as "Public Parks and Open Space," and the P Professional zoned parcels designated as "Mixed-Use." One exception is that two parcels zoned R-2 Residential, one of which is used as a place of worship and the other as a commercial use, are designated as "Mixed-Use".

The land uses and zoning in Middletown are generally compatible with the zoning and land uses in Bristol. The commercial areas are essentially located in both municipalities and are outgrowths of each other. The same can be said about the residential areas that are largely composed of Levittown

neighborhoods divided by New Falls Road. There is a potential for conflicting land uses on the properties adjacent to the Wistarwood neighborhood that are designated as "Mixed-Use."

Falls Township

Falls Township, located to the northeast, shares an irregular boundary with Bristol. Beginning at the northeast corner of Bristol, the boundary crosses through the Wistarwood neighborhood, the Fairless Hills shopping center on Oxford Valley Road, and the Drexelwood neighborhood in Fairless Hills. Once the boundary crosses New Falls Road it passes through the Levittown neighborhoods of Birch Valley, Elderberry Pond, and Will O Wood and then continues along Levittown Parkway until it meets with the boundary of Tullytown Borough.

Residential neighborhoods in Falls Township are zoned NCR Neighborhood Conservation Residential District and MR Medium Density Residential. These districts are adjacent to areas zoned R-2 Residential in Bristol. The zoning districts are similar in their permitted uses, but the minimum lot sizes of Falls Township are greater than permitted in Bristol. The Fairless Hills shopping center is zoned SC Shopping Center Commercial which allows for the development of shopping center facilities which offer multiple commercial, retail, and service operations developed in a uniform manner. This district is adjacent to the CS Shopping Center district in Bristol. The two zoning districts are similar in their intent and permitted uses.

The land uses on either sides of the boundary are generally identical, and thus compatible, due to the path of the boundary passing through established residential neighborhoods and the shopping center. The future land use plan map in the *Falls Township Comprehensive Plan Update (2004)* envisions the established land uses continuing as does this Plan.

Bristol Borough

Bristol Borough is surrounded on the west, north, and east by Bristol Township. The borough's western border begins at the Delaware River in the Maple Beach area and continues through the Rohm and Haas property. This area is zoned C Conservation which permits public and private parks, recreation areas, historic areas, and conservation areas.

The border then generally follows Otter Creek until it reaches Route 13 where it then follows the limits of the Bristol Commerce Park shopping center and through the campus of Lower Bucks Hospital. On either side of Otter Creek are light industrial uses. This area is zoned LI Light Industrial which permits a variety of light industrial, heavy commercial and office uses.

Along Route 13, the land uses are commercial and the zoning district is HC Highway Commercial. The HC Highway Commercial district allows for commercial and business uses that require location along well-traveled highways including automobile sales, retail center, car wash, miniature golf course, indoor theater, among other uses. The areas to the north and west of Bristol Commerce Park are residential and to the east the boundary straddles the Lower Bucks Hospital campus. Bristol Commerce Park is zoned HC Highway Commercial (described above) and II Intermediate Industrial. The II Intermediate Industrial zoning district allows for industrial uses not permitted in the LI Light Industrial district and which are not as intrusive and invasive as those permitted in the HI Heavy Industrial district.

The northern boundary passes through Silver Lake County Park and then follows the path of the Delaware Canal until reaching Green Lane where the boundary turns south and parallels Green Lane until finally reaching the Delaware River. The land use on the northern boundary is composed of the open space of the county park and the light industrial areas that straddle the boundary that follows the canal. The zoning districts found along the northern boundary include C Conservation, HI Heavy Industrial, and LI Light Industrial. The HI Heavy Industrial district allows for most types of industrial uses.

Once the boundary turns south from the Delaware Canal it begins to parallel Green Lane. Along Green Lane, there are concentrations of light industrial and heavy commercial uses near Route 13 and Radcliffe Streets with residential uses in between. The LI Light Industrial, HI Heavy Industrial, R-1 Residential, R-3 Active Adult Residential and GC General Commercial zoning districts are found along Green Lane. The R-1 Residential district is a medium density district that allows for single-family dwellings and related accessory uses, as well as various institutional uses. The R-3 Active Adult Residential district provides for a moderate density residential area for the housing of active adults in a variety of housing types. The GC General Commercial district allows for heavy commercial uses.

Much like the boundary with Falls Township, the land uses on either sides of the boundary are generally identical due to the path of the boundary passing through areas of light industrial, heavy industrial, commercial, and residential uses. The one area of potential land use incompatibility is the residential neighborhoods of West Bristol and Winder Village that border Bristol Commerce Park. However, these neighborhoods are somewhat protected from the effects of the non-residential land uses by Route 413 and the overhead power lines that are found along the boundary.

While the zoning districts of the two municipalities are generally compatible, there are several areas of conflict. One area is the Maple Beach area where the borough's C Conservation district abuts the township's M-2 Heavy Manufacturing District. The other area is where the II Intermediate Industrial zoning district on the northern boundary of Bristol Commerce Park abuts Winder Village, which is, zoned R-2 Residence.

The future land use patterns, as envisioned in the *Bristol Borough Comprehensive Plan (2006)*, adjacent to the township are expected to mirror the existing pattern and therefore remain generally compatible with those land uses in the township.

Tullytown Borough

Tullytown borough is located to the east of the township. The boundary begins in the south at the Delaware River and follows a straight path until it takes an approximate 90-degree turn in the Stonybrook neighborhood where it continues to Levittown Parkway and ends.

The LI Light Industrial, HC Heavy Commercial, SC Shopping Center, R-1 Residential zoning districts are found adjacent to Bristol Township. The LI Light Industrial district is located from the Delaware River north to the rail lines. This district provides for industrial uses in the borough and is consistent with the adjacent M-2 Heavy Manufacturing district in the township. The HC Highway Commercial District is located along US Route 13 and provides for highway oriented businesses and commercial uses similar to the adjacent C Commercial District in the township. The SC Shopping Center District provides for a wide variety of commercial and retail uses and is adjacent to the R-3 Residence district in the township. The R-1 Residential District is found along the remainder of the boundary and in the residential neighborhoods

of Kenwood, which is zoned R-3 in Bristol, and Stonybrook, zoned R-2 in Bristol. The permitted uses of the R-1 Residential District and the corresponding zoning districts in Bristol are similar.

The land uses in Tullytown and in the township are largely consistent since the boundary bisects areas that are homogenous in nature. The lone exception is the site of the shopping center of which a portion abuts the Kenwood neighborhood but this conflict is mitigated by a vegetative buffer.

The Statement of Community Goals and Objectives found in the borough's zoning ordinance serve as its comprehensive plan. These goals and objectives were updated in 2003 as part of an overall zoning ordinance update. The goals and objectives do not suggest any changes to the areas adjacent to the township.

Bucks County Planning Policies

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.

It is up to local elected officials to select those planning tools that will best meet the present and future needs of their community. 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 protection of natural and historic resources, and the promotion of infill development, redevelopment, neighborhood improvement and adaptive reuse that is respectful of existing development. This Plan, through its goals, objectives, and recommendations contributes to the achievement of the policies and objectives of the county's comprehensive plan.

CHAPTER 13

PLAN OF ACTION

This comprehensive plan is a guide for actions toward a better future for the township and its residents. The actions recommended must be consistent with policy established in the plan. The objectives and recommendations of this plan should also be reviewed frequently and updated when necessary. Bristol should coordinate its actions with its neighbors and Bucks County to ensure a regional perspective and not just a local focus.

Successful implementation of this comprehensive plan requires that specific measures, actions, programs, or techniques be taken in a timely, efficient, and cost-effective manner. The following implementation actions are specific tasks to be completed in order to carry-out the policies that will facilitate the desired goals and objectives expressed in Chapter 2 of the plan. Each action may be the responsibility of one or more entities and should be implemented in a given time frame. Time frames are ongoing, short-term, medium-term and long-term. Ongoing efforts are those currently being undertaken and which should continue into the future. A short-term effort should begin soon after plan adoption. Medium-term efforts should start 3-5 years after plan adoption. Groundwork laid by short- and medium-term efforts must take place before many of the long-term efforts can be implemented 5–10 years after plan adoption. Finally, potential funding sources are listed for certain actions where monies are available to defray the cost of implementation.

Development Today and Projected Changes

A. Nonresidential Development

Goal: Encourage nonresidential development that is well integrated and compatible with the surrounding context and character of the area and that has minimal impact on the highway network and other services.

Objectives

1. Encourage high-quality office, commercial, and industrial development to enhance the tax base within the township.
2. Promote adaptive reuse and redevelopment initiatives for abandoned industrial and commercial sites.
3. Require high standards to control nuisances such as objectionable odors, noise, smoke, and hazardous material of any kind.

Recommended Actions

1. The township should place a high priority on addressing outstanding infrastructure issues related to water supply and sewer capacity to provide certainty to new and existing commercial and industrial users of these services.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

2. In considering the future direction of the Rohm and Haas property, the township must balance the traffic, environmental, and quality-of-life concerns that may occur with a large redevelopment project with the possibilities conceived in the *Bucks County Waterfront Revitalization Plan*.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: LUPTAP

3. Consider the establishment of a convenience store use and development standards for its uses including minimum lot size, limit locations to arterials, establish hours of operation, and require a traffic impact study to be performed.

Entity Responsible: Planning Commission, Town Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

4. Conduct an evaluation of abandoned service stations in the township and explore a means for clean up and redevelopment. Examine preferred reuse options for these properties as a basis of future discussions with prospective developers.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: PADEP

5. Large Retail Store (D2) and the CS Shopping Center zoning district could be provided with updated standards to reduce the aesthetic impacts often associated with these uses.

Entity Responsible: Planning Commission, Town Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

6. Supplement standards for check cashing establishments (Use D29) to limit hours of operation, and provide design controls such as prohibiting use of bars, chains, or similar security devices that are visible from a public street or sidewalk.

Entity Responsible: Planning Commission, Town Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

7. Provide additional standards for Automotive Sales (Use D17a) that will reduce the visual impact. Such standards could control lighting impacts; provide additional setbacks for display and storage of vehicles; require a permanent building of a minimum square footage for offices, show rooms, and display; and provide additional landscape buffering.

Entity Responsible: Planning Commission, Town Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

B. Residential Development

Goal: Provide safe and adequate housing for present and future residents of all socioeconomic characteristics.

Objectives

1. Ensure that the zoning ordinance provides for a variety of housing types.
2. Promote the public health, safety, and welfare by ensuring a quality living environment that provides quality housing through sound zoning and subdivision and land development standards and modern building and fire codes.

Recommended Actions

1. Continue administering townshipwide Homeowner Occupied Housing Rehabilitation Program to providing monetary assistance to qualified residents.

Entity Responsible: Bristol Township Community Development Department, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: CDBG, BCOBD, DCED

2. Continue to monitor existing and proposed age-restricted developments to ensure they satisfy local market demands.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: LUPTAP

3. Continue overseeing infill development and redeveloped sites to ensure that they are appropriate for the context and setting in which they are located.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

4. Examine the R-4 Multifamily Residential District (particularly the minimum lot area standard) to determine its appropriateness within context and location of the township. If appropriate, the R-4 district regulations may be amended to increase the minimum lot area, or portions of the R-4 district could be rezoned to a more appropriate zoning district designation.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

5. Explore the feasibility of enhancing existing residential areas through the incorporation of alternative housing developments in appropriate locations throughout the township including traditional neighborhood development (TND) and transit-oriented design (TOD).

Entity Responsible:

Time Frame:

Funding or Technical Assistance:

Natural Resources

Goal: To maintain and enhance the natural resources found in the township.

Objectives

1. Recognize that the protection of natural resources has direct effects on the health, welfare and safety of the community.
2. Provide for the protection of critical natural resources including watersheds, groundwater, floodplain, floodplain soils, wetlands, steep slopes, woodlands, and streams.

Recommended Actions

1. Consider participation in the National Flood Insurance Program's Community Rating System to reduce flood insurance premiums for township homeowners, renters, and business owners.

Entity Responsible: Department of Building, Planning and Zoning, Township Engineer, Township Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: Pennsylvania Emergency Management Agency, Federal Emergency Management Agency

2. Amend the subdivision and land development ordinance to regulate land clearing and topsoil removal over large areas and limiting permissible site area disturbance.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

3. Amend the subdivision and land development ordinance to require replacement of trees that are removed or destroyed during any stage of development.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

4. Continue to work with organizations and programs such as TreeVitalize and the Coastal Zone Management to tailor a project that will increase tree cover in the community.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: TreeVitalize Program, Coastal Zone Management Program

5. Consider amending the zoning ordinance to add riparian buffer requirements.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP, Growing Greener, PADEP, DCED

6. Consider the creation of an environmental advisory committee (EAC).

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance:

7. Incorporate Low Impact Development (LID) techniques into the zoning ordinance and subdivision and land development ordinance.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

Cultural, Architectural, and Historical Resources

Goal: To recognize and protect the cultural, architectural, and historical resources of Bristol Township so that they are preserved for future generations.

Objectives

1. Recognize and protect historic features, including structures, sites, waterways, villages, and landscapes having a special character or use, affecting and affected by their environment.
2. Preserve and protect historic resources in established historic areas and districts.
3. Promote the preservation of historic resources outside of the established historic areas and districts.

Recommended Actions

1. Conduct a comprehensive survey of the township to identify resources of historical significance.

Entity Responsible: Planning Commission

Time Frame: Medium-term

Funding or Technical Assistance: Pennsylvania Historical and Museum Commission (PHMC),
Historic Preservation Survey and Planning Grants

2. Continue to support efforts of individuals and groups to identify sites worthy of eligibility on the National Register and efforts to place resources deemed eligible onto the Register.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: PHMC

3. Consider the merits of establishing a historic district ordinance under the authority of Act 167.

Entity Responsible: Planning Commission, Township Council

Time Frame: Medium-term

Funding or Technical Assistance: PHMC

4. Consider applying for Certified Local Government status if a historic district ordinance is established under Act 167.

Entity Responsible: Planning Commission, Township Council

Time Frame: Medium-term

Funding or Technical Assistance: PHMC

5. Continue to control demolition of historic resources through the demolition provisions in the zoning ordinance.

Entity Responsible: Department of Licenses and Inspections, Township Council, Zoning Hearing Board

Time Frame: Ongoing

Funding or Technical Assistance: PHMC, Keystone Historic Preservation Funds

6. Consider applying for historical markers through the Historical Marker Program of the PHMC or developing a local-based historic marker program to designate the township's significant resources.

Entity Responsible: Planning Commission, Township Council

Time Frame: Medium-term

Funding or Technical Assistance: PHMC, Historical Marker Program

7. Coordinate with the Pennsylvania Department of Conservation and Natural Resources—Bureau of State Parks to determine the feasibility of restoring strategic segments of the Delaware Canal to its original configuration and condition.

Entity Responsible: Parks and Recreation Department, Township Council

Time Frame: Short-term

Funding or Technical Assistance: DCNR

8. Adopt additional historic preservation zoning provisions to encourage preservation of historic buildings and to allow for additional use opportunities (e.g., buffer requirements, use regulations).

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: PHMC, LUPTAP

9. Consider adopting historic district zoning to protect Newportville and Fergusonville areas by ensuring that new development is consistent with existing building placement and style.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: PHMC, LUPTAP

10. Consider adopting design guidelines for villages and special areas such as Newportville, Fergusonville, Edgely, and Croydon.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: PHMC, LUPTAP

11. Support the activities of the Friends of Bolton Mansion and consider the establishment of a museum dedicated to the history of Bristol Township and Levittown at the Bolton Mansion.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance: PHMC

12. Seek funding sources for historic resources in need of rehabilitation.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance: PHMC, Keystone Historic Preservation Funds

Parks, Recreation, and Open Space Planning

Goal: To provide adequate parks and recreation facilities for all age groups and interests and to promote the preservation of open space as a means to contribute to the quality of life of township residents.

Objectives

1. Recognize that the provision of parks, recreation opportunities, and open space contribute to the quality of life for township residents by offering relief from stress, enhancement of mental and physical fitness, and the ability to be closer to nature and to escape from the built environment.

2. Make use of existing infrastructure and natural corridors for recreation opportunities.
3. Coordinate and cooperate with governmental agencies and other recreation providers to support their efforts.

Recommended Actions

1. Implement pertinent recommendations of the 1997 *Bristol Township Park, Recreation, and Open Space Plan* and update if necessary.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: BCOSPP, DCNR

2. Continue to identify appropriate means to reduce or eliminate littering and vandalism of park and recreational facilities such as increased police surveillance or an adopt-a-park program.

Entity Responsible: Township Parks and Recreation Department, Public Works, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: DCNR, CDBG

3. Provide ongoing upkeep and maintenance of aging recreational facilities and to protect the health and safety of park users. Consider potential funding sources to supplement the township's budget for this purpose.

Entity Responsible: Township Parks and Recreation Department, Public Works, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: DCNR

4. Continue to promote cooperative use of school district facilities after hours to supplement resident's park and recreational needs.

Entity Responsible: Township Parks and Recreation Department, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

5. Establish greenway linear parks with trails along stream corridors and the Delaware Canal where possible.

Entity Responsible: Township Council

Time Frame: Short-term

Funding or Technical Assistance: BCOSPP, DCNR, PennDOT, TEA-21 Transportation Enhancements Program, NPS

6. Facilitate planning efforts for the East Coast Greenway and the Delaware River Heritage Trail.

Entity Responsible: Township Council

Time Frame: Short-term

Funding or Technical Assistance: DCNR, PennDOT, TEA-21 Transportation Enhancements Program

7. Work with developers to create continuous public access along the Delaware River. Where possible, reinforcement of the public nature of the river should be provided by establishing a strip of land along the river's edge as a public linear park. For every redevelopment on waterfront property, each jurisdiction should set a "condition of approval" dedicating a public riverwalk along the entire river's frontage of the property.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

8. Coordinate planning with Bucks County to meet township park and recreation needs.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance: BCPD

9. Evaluate existing school facilities to determine if they can meet needs for miniparks and community parks.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance:

10. Determine if PECO corridors are appropriate for greenways and coordinate with PECO to provide public access.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: DCNR

11. Revise the zoning ordinance to incorporate the requirements of Appendix B (Special Zoning Provisions for Areas Adjoining the Delaware Canal) into the zoning ordinance by reference. In order to eliminate inconsistencies and redundancies, the deletion of Section 2124.B (Special Setback from the Delaware Canal State Park) maybe necessary.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

12. Survey and evaluate existing natural greenways to determine if enhancement is necessary.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: BCOSPP, DCNR

Community Facilities and Services

Goal: To provide needed and desirable services within the constraints of the township's fiscal abilities.

Objectives

1. Foster the efficient and cost-effective provision and utilization of community services and facilities (i.e., police, fire protection, medical services, schools and colleges, libraries).
2. Provide adequate public protection and preserve Bristol Township as a safe and desirable community.

Recommended Actions

1. Assist local fire companies in volunteer recruitment efforts to meet staffing needs.

Entity Responsible: Fire Marshal's Office, Township Council

Time Frame: Short-term

Funding or Technical Assistance: State Fire Commissioner

2. Assist local fire companies with the financial challenges and needs they face.

Entity Responsible: Fire Marshal's Office, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: State Fire Commissioner

3. Coordinate with emergency medical service providers and county officials to ensure community needs are met in the most efficient manner possible.

Entity Responsible: Fire Marshal's Office, Township Council

Time Frame: Short-term

Funding or Technical Assistance: Bucks County Emergency Management Agency

4. Investigate ways to provide additional funding and insurance assistance to the emergency rescue squads.

Entity Responsible: Fire Marshal's Office, Township Council

Time Frame: Short-term

Funding or Technical Assistance: State Fire Commissioner

5. Monitor population trends and anticipate needs of aging baby boomers and seniors to ensure that the zoning ordinance provides for both the latest types of elderly care facilities and adequate opportunities for these sites in the township.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: LUPTAP

6. Township officials should meet on a regular basis (i.e., annually) with hospital administration to discuss mutual needs and how township officials can help ensure quality health care for residents.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

7. Maintain and enhance the existing cooperative relationship between the township, the Bristol Township School District, Bucks County Technical High School, and the Bristol campus of the Bucks County Community College.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

8. Coordinate actions of the township, the Bristol Township School District, the Bucks County Technical High School, and the Bristol campus of the Bucks County Community College to maximize use of tax dollars as facility needs change over time.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

9. Support activities of the library.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

10. Continue to seek grant opportunities and alternate funding sources for the implementation of township programs and initiatives.

Entity Responsible: Managing Director

Time Frame: Ongoing

Funding or Technical Assistance:

11. Continue to work with the Bucks County Redevelopment Authority to assist in the redevelopment of property consistent with the goals and objectives of this Plan.

Entity Responsible: Managing, Director, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

12. Evaluate the need and feasibility of adding additional township staff for municipal administration and other township departments.

Entity Responsible: Managing Director, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

13. Upgrade township records system and develop a Geographic Information System for all administrative departments.

Entity Responsible: Managing Director, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

14. Determine appropriate levels of funding and staffing needed for department operations and necessary upgrades of public facilities.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

15. Adopt capital improvements programming to schedule funding and seek money to fund planned work.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

16. Establish a program to collect recycling information from businesses operating in the township to assure they have a recycling program in place.

Entity Responsible: Recycling Department

Time Frame: Short-term

Priority:

Funding or Technical Assistance: Section 902 of Act 101 Grant, PADEP

17. Provide a program to offer assistance to businesses and institutions in the township to review their waste management programs and to assist them in their efforts to divert greater amounts of material from the waste stream.

Entity Responsible: Recycling Department

Time Frame: Short-term

Priority:

Funding or Technical Assistance: PADEP, BCPC

18. Establish an enforcement program that might entail an annual review/inspection of each business within the community.

Entity Responsible: Recycling Department

Time Frame: Short-term

Priority:

Funding or Technical Assistance: PADEP, BCPC

Water Resources and Usage

Goal: To protect the township's water quality, ensure an adequate water supply to support future growth and development, provide for stormwater management that focuses on water quality and groundwater recharge, and provide adequate wastewater treatment capacity to allow for future development within the township.

Objectives

1. Protect groundwater supply in the township by regulating the use of the land in the area around wellheads serving community water supply systems.
2. Control the quality and quantity of stormwater runoff to prevent the degradation of waterways and flooding.
3. Protect wellheads of community water supply systems from contamination by inappropriate land uses.
4. Provide for and/or maintain water supply and wastewater facilities that effectively serve the existing and anticipated service requirements of residents.

Recommended Actions

1. Amend the subdivision and land development ordinance to require that a water resource impact study be conducted when a proposed development is not served by a public water supply.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

2. Formulate and adopt regulations regarding the establishment and protection of wellhead protection zones.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

3. Determine if design and construction elements related to stormwater collection facilities should be integrated back into the subdivision and land development ordinance.

Entity Responsible: Planning Commission, Township Engineer, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

4. Continue to enforce the recommendations of the Delaware River South and the Neshaminy Creek stormwater management plans.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

5. Continue participation in the development of the Neshaminy Creek stormwater management plan update.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

6. Continue to ensure compliance with NPDES program and file program reports.

Entity Responsible: Building, Planning and Zoning Department

Time Frame: Ongoing

Funding or Technical Assistance:

7. Review ordinances to ensure Bristol Township is implementing state-of-the-art stormwater BMPs.

Entity Responsible: Planning Commission, Township Engineer, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

8. Identify flood-prone areas at the municipal level and determine if remediation measures are feasible.

Entity Responsible: Planning Commission, Township Engineer, Township Council

Time Frame: Short-term

Funding or Technical Assistance: Pennsylvania Emergency Management Agency, FEMA, U.S. Army Corps of Engineers

9. Establish regular maintenance programs for stormwater management facilities.

Entity Responsible: Township Council

Time Frame:

Funding or Technical Assistance:

10. Evaluate alternative best management practices (BMPs) for maintaining and retrofitting existing substandard stormwater management basins.

Entity Responsible: Planning Commission, Township Engineer, Township Council

Time Frame: Short-term

Funding or Technical Assistance:

11. Revise the Act 537 Sewage Facilities Plan in accordance with the recommendations of the Comprehensive Plan Update.

Entity Responsible: Township Council

Time Frame: Short-term

Funding or Technical Assistance: PADEP, Sewage Facility Planning Grants

Transportation and Circulation

Goal: To achieve a safe, efficient, rapid, and pleasant circulation system for both necessary and pleasure trips incorporating a variety of modes, including vehicular, bicycle and pedestrian travel.

Objectives

1. Encourage the expansion and utilization of mass transit and nonautomotive modes of transportation.
2. Maintain and promote vehicular and pedestrian mobility, access, and safety throughout the township.
3. Maintain and promote a cooperative process for the future improvement of critical corridors in the region such as Routes 13 and 413 and New Falls Road.
4. Promote access management techniques along arterial and collector roads including limiting the number and location of access points; marginal access streets; shared driveways; and reverse frontage streets.

Recommended Actions

1. Work with SEPTA and the Transportation Management Association of Bucks County to ensure that the public transportation needs of its residents are being met.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: SEPTA, TMA Bucks

2. Work with SEPTA with the renovation of the Croydon Station and the implementation of the Croydon Transit Revitalization Investment District recommendations.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: SEPTA

3. 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 Transportation Improvement Programs.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing
Funding or Technical Assistance: BCPC

4. Work with the Turnpike Commission to ensure that the needs of motorists and emergency personnel are addressed during the construction of the Interstate 95/Pennsylvania Turnpike Interchange.

Entity Responsible: Township Council
Time Frame: Short-term
Funding or Technical Assistance: PennDOT

5. Ensure that the recommendations of the *Neighborhood Enhancement Study—A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues* are followed. This township should consult the recommendations of the study as development occurs at or near the areas identified in the plan.

Entity Responsible: Township Council
Time Frame: Short-term
Funding or Technical Assistance: PennDOT, TEA 21 Transportation Enhancements Program

6. Work with PennDOT to ensure that recommendations from the *U.S Route 13 Revitalization Plan* are included in any future rehabilitation projects undertaken by PennDOT.

Entity Responsible: Planning Commission, Township Council
Time Frame: Ongoing
Funding or Technical Assistance: PennDOT

7. Utilize a context sensitive solutions approach as roadways and bridges in the township are reconstructed.

Entity Responsible: Public Works, Planning Commission, Township Council
Time Frame: Ongoing
Funding or Technical Assistance: PennDOT

8. Develop specific policies regarding traffic calming, including the participation of any neighborhood that could be impacted by the addition of traffic calming measures.

Entity Responsible: Planning Commission, Township Council
Time Frame: Short-term
Funding or Technical Assistance: PennDOT, LUPTAP, HTS/SRS, SAFETEA-LU

9. Prepare a study to determine locations for new sidewalks to connect residential and nonresidential land uses. The Levittown neighborhoods should be carefully examined.

Entity Responsible: Planning Commission, Township Council
Time Frame: Mid-term
Funding or Technical Assistance: LUPTAP, HTS/SRS, PennDOT

10. Prepare a bicycle plan to determine the best routes to connect existing and anticipated developments with key community locations.

Entity Responsible: Planning Commission, Township Council

Time Frame: Mid-term

Funding or Technical Assistance: HTS/SRS, PennDOT

11. Develop an access management plan to be included in the subdivision and land development review process.

Entity Responsible: Planning Commission, Township Council

Time Frame: Mid-term

Funding or Technical Assistance: PennDOT Growing Smarter Transportation Initiative

12. Consider the preparation and adoption of an official map indicating future right-of-way, new public roads, and driveway access points in order to implement the access management plan.

Entity Responsible: Planning Commission, Township Council

Time Frame: Long-term

Funding or Technical Assistance: LUPTAP

Economic Development, Revitalization, and Vitality

Goal: To accommodate the needs of the township's business community and improve the business climate by improving the township's quality of life, workforce, and infrastructure.

Objectives

1. Provide an attractive economic environment in which the township's existing and future businesses can thrive.
2. Expand the township's tax base through appropriate commercial and industrial development and redevelopment.
3. Enhance the effectiveness and efficiency of the township's operation and financing.

Recommended Actions

1. Provide a one-stop shop for local business assistance including procedures and trained staff aimed at expeditious help for business owners.

Entity Responsible: Department of Building, Planning and Zoning, Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance:

2. Evaluate impact of existing business taxes on local businesses and industry.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: DCED

3. Coordinate local economic development activities with the Bucks County Economic Development Corporation and Bucks County Department of Community Business Development.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: BCEDC, BCDOBD

4. Promote use of Enterprise Zone, KOZ, LERTA and Land Recycling programs.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance: DCED, BCRDA

5. Establish an annual forum between the business community and township officials provide an open dialogue and promote an improved business environment.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

6. Support and public education and vocational training.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance: PennDOT

7. Streamline permitting process to facilitate redevelopment.

Entity Responsible: Department of Building, Planning and Zoning, Township Council

Time Frame: Short-term.

Funding or Technical Assistance: LUPTAP

8. Coordinate investment in telecommunication infrastructure with providers.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

9. Improve traffic mobility through the implementation of the recommendations of Chapter 9 Transportation and Circulation.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

10. Enhance natural resource integrity through the implementation of the recommendations of Chapter 4 Natural Resources.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

11. Enhance cultural facilities through the implementation of the recommendations of Chapter 5 Cultural, Architectural and Historical Resources.

Entity Responsible: Township Council

Time Frame: Ongoing.

Funding or Technical Assistance:

12. Enhance public safety through the implementation of the recommendations found in Chapter 7 Community Facilities and Services.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

13. Amend the township zoning ordinance to require a fiscal impact study for zoning changes.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

14. Follow recommended procedures to develop and ultimately adopt a CIP, which will facilitate implementation of pertinent Comprehensive Plan objectives.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

15. Adapt current five-year Strategic Plan to include policies in the comprehensive plan.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance:

15. Prioritize actions recommended in Comprehensive Plan Update.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

Future Land Use

Goal: To maintain and/or reestablish land use patterns which contribute to healthy, convenient, and prosperous living and working conditions, including employment opportunities for township residents.

Objectives

1. Promote the planning principles established in this Plan for future development and redevelopment throughout the township.
2. To address the planning and development problems and issues identified in the 11 Special Study Areas (as shown in Map 4).

Recommended Actions

Overall Planning Issues

1. Encourage smart growth and sustainability for future development through the use of “green design” such as LEED certification, the use of porous paving, green roofs, rain gardens, and other appropriate best management practices (BMPs).

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

2. Implement appropriate recommendations of this Plan and other strategic plans (e.g., *Bucks County Waterfront Revitalization Plan*, *Croydon Transit Investment District Study*, and *U.S. Route 13 Revitalization Plan*) over the next decade and beyond.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing.

Funding or Technical Assistance:

3. Continue to proactively identify appropriate alternatives for infill redevelopment projects that are compatible with the scale and context of their surroundings.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing.

Funding or Technical Assistance:

Special Study Areas

4. Ensure that the township's land use regulations are consistent with current and future trends in the office, retail, hospitality, and industrial sectors to facilitate development associated with the Pennsylvania Turnpike/Interstate 95 Interchange.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

5. Provide opportunities for cooperative marketing of local businesses to support economic growth.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

6. Use the *Bucks County Waterfront Revitalization Plan* as the guiding document for future land use and development of Bristol's waterfront.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

7. Implement a mixed-use overlay zoning district for the Rohm and Haas property.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing.

Funding or Technical Assistance: LUPTAP

8. Prepare a study that evaluates the alternatives for the Minot Avenue neighborhood. The study should include a cost-benefit analysis to support any recommendations.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: Army Corps of Engineers, PEMA, FEMA

9. Acquire the former Jack's Marina property if current development proposals are not carried out.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance: BCOSPP

10. Improve and enhance Overlook Park by protecting the tidal marsh and wetlands from riverbank development and removing man-made debris from site.

Entity Responsible: Parks and Recreation Department, Public Works, Township Council

Time Frame: Short-term

Funding or Technical Assistance: DCNR

11. Incorporate multipurpose trails along the Neshaminy Creek as proposed in the *Bucks County Park and Recreation Plan*.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance: BCOSPP, DCNR, HTS/SRS

12. Amend the township's land use regulations to implement recommendations of the Croydon TRID study.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

13. Implement recommendations from the *Bucks County Waterfront Revitalization Plan* related to address streets, riverfront corridors, and municipal gateways.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance:

14. Prepare a study to address flooding and stormwater management throughout the study area.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance:

15. Partner with Middletown Township to make streetscape improvements to New Falls Road.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance: HTS/SRS, PennDOT

16. As part of a townshipwide study on access management issues focus on improvements to New Falls Road, South Oxford Valley Road, and Levittown Parkway.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: PennDOT, LUPTAP, HTS/SRS, SAFETEA-LU

17. Explore the possibility of incorporating portions of the PECO property into the existing township greenway.

Entity Responsible: Township Council

Time Frame: Short-term

Funding or Technical Assistance: BCOSPP, DCNR

18. Continue to support the activities of the Freedom Neighborhood I, neighborhood improvement associations, and the Weed and Seed initiative.

Entity Responsible: Township Department of Community Development, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: BCOCBD, CDBG

19. Consider increased code enforcement efforts and sponsorship of clean up days.

Entity Responsible: Township Department of Building, Planning and Zoning, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

20. Continue to utilize the township's CDBG funds for home rehabilitations and other community improvement activities and the first-time homebuyers program for down payment assistance in the study area.

Entity Responsible: Township Department of Community Development, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: BCOCBD, CDBG

21. Use the *U.S. Route 13 Revitalization Plan* as the guiding document for future land use and development in the corridor.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing.

Funding or Technical Assistance:

22. Continue to work with PennDOT to implement recommendations of the *U.S. Route 13 Revitalization Plan*.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance: PennDOT

23. Promote redevelopment in the vicinity of the Route 13/Pennsylvania Turnpike Interchange with mixed-use development consisting of offices, hotels, entertainment facilities, and restaurants. Consider the provision of local ordinances and regulations that can foster a high-quality, unified master plan of this area.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

24. Acquire underutilized parcels for open space expansion along the Delaware Canal State Park.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance: BCOSPP, DCNR, NPS

25. Establish a gateway feature along the Bensalem Township border to include appropriate signage, landscaping, and lighting.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance:

26. Consider adopting historic district zoning and/or village design guidelines for the study area.

Entity Responsible: Planning Commission, Township Council

Time Frame: Medium-term

Funding or Technical Assistance: PHMC

27. Implement recommendations of the *Neighborhood Enhancement Study, A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues in Bensalem, Bristol, and Middletown Townships*.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance: PennDOT

28. Continue to monitor the area for land use changes and to identify potential land use conflicts.

Entity Responsible: Planning Commission, Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

29. Encourage employers within the 3M Industrial Park to hire and train residents of the Residential Opportunity Neighborhoods.

Entity Responsible: Township Council

Time Frame: Ongoing

Funding or Technical Assistance:

30. Review existing overlay district regulations and design standards to determine if changes are warranted that may provide additional flexibility to developers.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

31. Consider expanding the design guidelines to provide more detailed descriptions and illustrations.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

32. Work with the Bucks County Redevelopment Authority to target underutilized lands in the study area for redevelopment.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance: BCRDA

33. Establish a gateway feature along the Middletown Township border to include appropriate signage, landscaping and lighting.

Entity Responsible: Township Council

Time Frame: Medium-term

Funding or Technical Assistance:

34. Consider implementing an overlay district similar to and complimentary to the Town Center District. Appropriate building scale, setback, and façade treatment regulations should be prepared to enhance the architectural unity of the study area.

Entity Responsible: Planning Commission, Township Council

Time Frame: Short-term

Funding or Technical Assistance: LUPTAP

List of Acronyms

BCDH	Bucks County Department of Health
BCOCBD	Bucks County Office of Community and Business Development
BCOSPP	Bucks County Open Space Preservation Program
BCPC	Bucks County Planning Commission
BCPD	Bucks County Parks Department
BCRDA	Bucks County Redevelopment Authority
CDBG	Community Development Block Grant
CMAQ	Congestion Mitigation and Air Quality Improvement Program
DVRPC	Delaware Valley Regional Planning Commission
DCED	Department of Community and Economic Development
DCNR	Department of Conservation and Natural Resources
HTS/SRS	Hometown Streets & Safe Routes to School
LUPTAP	Land Use Planning and Technical Assistance Program
MGP	Municipal Grant Program
NPS	National Park Service
PADEP	Pennsylvania Department of Environmental Protection
PennDOT	Pennsylvania Department of Transportation
PHMC	Pennsylvania Historical and Museum Commission
SEPTA	Southeastern Pennsylvania Transportation Authority
TIP	Transportation Improvement Program
TMA Bucks	Transportation Management Association of Bucks County

APPENDIX A
BUSINESS SURVEY

APPENDIX A

BRISTOL TOWNSHIP BUSINESS SURVEY RESULTS

In March of 2008, a survey was sent out to businesses in Bristol Township as part of this comprehensive planning process. The purpose was to identify the profile of area business owners and solicit their opinions on problems and opportunities affecting township's existing and future businesses. Approximately 2,200 surveys were mailed out and approximately 150 returned. This represents about a 12 percent response rate, which is considered very good for this type of survey and conveys a general enthusiasm of the survey's planning issues. The responses to the survey were used by township officials to formulate action items that are meant to improve and enhance the township's business environment.

In addition to the survey results found below, respondents were given several opportunities to add written comments. These comments were not included in the comprehensive plan but are available for review at the Department of Building, Planning and Zoning.

1. How long have you operated a business in Bristol Township?

Not Answered	1	
Total Response	145	
Less than one year	2	1.4%
1 - 5 years	25	17.2%
6 - 10 years	27	18.6%
11 - 15 years	16	11.0%
16 - 20 years	14	9.7%
More than 20 years	61	42.1%

2. What is the general nature of your business?

Not Answered	29
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3. From a business perspective, what are the three biggest challenges Bristol Township will face in the next five years?

Not Answered	7
--------------	---

	1		2		3		Answers not rated	Overall totals and percentages	
Traffic	4	4.0%	9	9.5%	10	10.8%	9	32	8.1%
Taxes and other costs	25	25.3%	26	27.4%	12	12.9%	26	89	22.6%
Infrastructure	7	7.1%	7	7.4%	6	6.5%	7	27	6.9%
Crime	14	14.1%	11	11.6%	8	8.6%	22	55	14.0%
Attracting new and different types of businesses	8	8.1%	13	13.7%	11	11.8%	14	46	11.7%
Maintaining competitiveness with malls and national retailers	8	8.1%	9	9.5%	15	16.1%	6	38	9.7%
Costs of doing business	28	28.3%	11	11.6%	15	16.1%	12	66	16.8%
Retaining business	5	5.1%	9	9.5%	16	17.2%	10	40	10.2%
Other comments	8	Totals	99	95	93	287	106	393	

4. Do you own or rent your place of business?

Not Answered	3	
Total Responses	142	
Own	78	54.9%
Rent	64	45.1%

5. List the three most important things Bristol Township could do to improve your ability to operate a successful business in Bristol.

Not Answered 9

	1		2		3		Answers not rated	Overall totals and percentages	
Mass transit	9	9.2%	4	4.3%	4	4.5%	8	25	6.7
Pedestrian circulation, crosswalks	1	1.0%	4	4.3%	2	2.3%	8	15	4.0
Bike Paths	1	1.0%	1	1.1%	0	1.1%	4	6	1.6
Better coordination with borough government	12	12.2%	12	12.9%	10	11.4%	10	44	11.8%
Beautify streets	15	15.3%	17	18.3%	13	14.8%	19	64	17.2%
Special events	0	0.0%	1	1.1%	7	8.0%	6	14	3.8
Increase police presence	11	11.2%	20	21.5%	14	15.9%	13	58	15.5%
Marketing coordination	6	6.1%	6	6.5%	4	4.5%	7	23	6.2
Expand business district	3	3.1%	2	2.2%	1	1.1%	4	10	2.7
Housing variety/affordability	3	3.1%	6	6.5%	9	6.5%	3	21	5.6
Better licensing and regulatory environment	20	20.4%	9	9.7%	11	12.5%	11	51	13.7%
Traffic calming	9	9.2%	6	6.5%	8	9.1%	7	30	8.0

6. Please rate the degree to which you are experiencing the following business challenges:

Not Answered 6

Needs	Excellent		Good		Average		Improvement		No Opinion	
Language barriers	9	0.4%	24	1.2%	41	2.0%	16	0.8%	41	2.0%
Unsafe building conditions	16	0.8%	29	1.4%	26	1.3%	12	0.6%	43	2.1%
State business regulations	3	0.1%	27	1.3%	33	1.6%	36	1.7%	24	1.2%
Local regulations	4	0.2%	29	1.4%	40	1.9%	46	2.2%	11	0.5%
Local road quality	1	0.0%	19	0.9%	27	1.3%	81	3.9%	3	0.1%
Local road network	5	0.2%	32	1.5%	44	2.1%	35	1.7%	10	0.5%
Highway access	30	1.5%	49	2.4%	30	1.5%	10	0.5%	11	0.5%
Airport access	11	0.5%	49	2.4%	29	1.4%	2	0.1%	30	1.5%
River access	11	0.5%	29	1.4%	25	1.2%	13	0.6%	42	2.0%
Public water availability/capacity	16	0.8%	63	3.0%	29	1.4%	12	0.6%	43	2.1%
Public sewer availability/capacity	16	0.8%	56	2.7%	27	1.3%	13	0.6%	15	0.7%
Internet connectivity	12	0.6%	44	2.1%	36	1.7%	20	1.0%	15	0.7%
Natural gas availability	11	0.5%	45	2.2%	31	1.5%	11	0.5%	30	1.5%
Electrical power	15	0.7%	60	2.9%	36	1.7%	5	0.2%	12	0.6%
Railroad access	13	0.6%	34	1.6%	31	1.5%	8	0.4%	39	1.9%
Mass transit opportunities	7	0.3%	27	1.3%	32	1.5%	40	1.9%	24	1.2%
Totals	180	8.7%	616	29.8	517	25.0	360	17.4	393	19.0

Grant Total 2,066

**7. If you had \$100 to spend on borough physical improvements, how would you allocate it?
(Amounts are averaged)**

Not Answered	12
Arts and culture facilities	\$20.93
Open space	\$30.00
Recreation facilities	\$25.47
Roads and traffic control	\$50.18
Sidewalks, pedestrian circulation	\$30.51
Stormwater improvements	\$35.11
Streetscape beautification	\$37.26
Other	\$28.00

8. Please rate the following services provided by Bristol Township or other local governmental agencies.

Needs	Excellent		Good		Average		Improvement		No Opinion	
Local police	33	3.5%	59	6.2%	26	2.7%	23	2.4%	1	0.1%
Local fire protection	46	4.8%	67	7.1%	26	2.7%	1	0.1%	3	0.3%
Township services	7	0.7%	38	4.0%	47	5.0%	31	3.3%	6	0.6%
The local school system	6	0.6%	22	2.3%	35	3.7%	47	5.0%	26	2.7%
Libraries	9	0.9%	41	4.3%	37	3.9%	11	1.2%	36	3.8%
Parks and recreation	4	0.4%	29	3.1%	45	4.7%	31	3.3%	27	2.8%
Mass transit	3	0.3%	16	1.7%	43	4.5%	29	3.1%	41	4.3%
Totals	105	11.1%	272	28.7%	259	27.3%	173	18.2%	140	14.8%

Grand Total 949

9. Over the next five years, do you expect to:

Not Answered	15
Total response	145
Expand products/services or SF here	48
Expand products/services or SF outside of Bristol Twp	15
Reduce products/services or SF here	9
I don't have any plans for change	73

10. How would you describe the climate for business in the township?

Not Answered	1
Total response	141
Number of comments	26
Excellent	0 0.0%
Very Good	12 8.5%
Good	58 41.1%
Fair	48 34.0%
Poor	23 16.3%

11. Of these three choices, which one would you prefer?

Not Answered	5
Total response	128
Lower taxes with reduced level of municipal services.	51 39.8%
Same taxes with about the same level of municipal services.	64 50.0%
Higher taxes with improved municipal services.	13 10.2%

1. How long have you operated a business in Bristol Township? *(Check one response.)*

- Less than one year 6 – 10 years 16 – 20 years
 1 – 5 years 11 – 15 years More than 20 years

2. What is the general nature of your business? *(Specify.)*

3. From a business perspective, what are the three biggest challenges Bristol Township will face in the next five years? *(Select the three greatest challenges ranking them from 1 to 3, with 1 being the greatest challenge.)*

- | | |
|--|---|
| _____ Traffic | _____ Maintaining competitiveness with other locations |
| _____ Taxes and other costs | _____ Costs of doing business: energy, health care, rent, personnel costs, etc. |
| _____ Infrastructure | _____ Retaining business |
| _____ Crime | |
| _____ Attracting new and different types of businesses | |
| _____ Other comments: | |

4. Do you own or rent your place of business? *(Check one response.)* own rent

5. List the three most important things Bristol Township could do to improve your ability to operate a successful business in Bristol. *(Select the most important things, ranking them from 1 to 3, with 1 being the most important.)*

- | | |
|--|---|
| _____ Mass transit | _____ Marketing coordination |
| _____ Pedestrian circulation, crosswalks | _____ Expand industrial parks |
| _____ Bike paths | Where? _____ |
| _____ Better coordination with township government | _____ Housing variety/affordability for employees |
| _____ Beautify street—plantings, street cleaning, lighting | _____ Better licensing and regulatory environment (e.g., signs, permitting) |
| _____ Special events (holiday lighting, shopping nights, street festivals, etc.) | _____ Traffic calming |
| _____ Increase police presence | _____ Other <i>(Specify.)</i> _____ |

6. Please rate the degree to which you are experiencing the following business challenges:

	Excellent	Good	Average	Needs Improvement	No Opinion
Language barriers					
Unsafe building condition					
State business regulations					
Local regulations					
Local road quality					
Local road network					
Highway access					
Airport access					
River access					
Public water availability or capacity					
Public sewer availability or capacity					
Internet connectivity					
Natural gas availability					
Electrical power					
Railroad access					
Mass transit opportunities					

7. If you had \$100 to spend on township physical improvements, how would you allocate it? *(Allot a dollar amount to as few, or as many, improvements as you like, until a total of \$100 is expended. For example, \$100 may be allotted to a single activity, or \$50 to one activity and \$10 to each of five other activities, etc.)*

_____ Roads and traffic control _____ Recreation facilities _____ Sidewalks, pedestrian circulation _____ Arts and culture facilities _____ Open space	_____ Streetscape beautification _____ Stormwater improvements _____ Other <i>(Specify.)</i> _____ _____ _____
--	--

8. Please rate the following services provided by Bristol Township or other local governmental agencies.

	Excellent	Good	Average	Needs Improvement	No opinion
Local police protection					
Local fire protection					
Township services (e.g. building inspections, planning, zoning etc.)					
The local school system					
Libraries					
Parks and recreation					
Mass Transportation – for my business needs					
Other: _____					

9. Over the next five years, do you expect to:

- _____ Expand products/services or square footage here
- _____ Expand products/services or square footage at a location outside of Bristol Township
- _____ Reduce products/services or square footage here
- _____ I don't have any plans for changes

10. How would you describe the climate for business in the township? (Check one response.)

- Excellent Very good Good Fair Poor

Comments: _____

11. Of these three choices, which one would you prefer? (Check one response.)

- Lower taxes with reduced level of municipal services.
- Same taxes with about the same level of municipal services.
- Higher taxes with improved municipal services.

12. Use the remaining space to offer your opinions about the topics addressed above or any other issues you believe township officials should consider. Attach additional sheet(s) if necessary.

APPENDIX B
PLAN OF ACTION SUMMARY CHART

DEVELOPMENT TODAY AND PROJECTED CHANGES—NONRESIDENTIAL

Goal:

Encourage nonresidential development that is well integrated and compatible with the surrounding context and character of the area and that has minimal impact on the highway network and other services.

Objectives:

1. Encourage high-quality office, commercial, and industrial development to enhance the tax base within the township.
2. Promote adaptive reuse and redevelopment initiatives for abandoned industrial and commercial sites.
3. Require high standards to control nuisances such as objectionable odors, noise, smoke, and hazardous material of any kind.

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (√)
	1. The township should place a high priority on addressing outstanding infrastructure issues related to water supply and sewer capacity to provide certainty to new and existing commercial and industrial users of these services.	BTC	Ongoing	
	2. In considering the future direction of the Rohm and Haas property, the township must balance the traffic, environmental, and quality-of-life concerns that may occur with a large redevelopment project with the possibilities conceived in the <i>Bucks County Waterfront Revitalization Plan</i> .	BTPC, BTC	Ongoing	
*	3. Consider the establishment of a convenience store use and development standards for its uses including minimum lot size, limit locations to arterials, establish hours of operation, and require a traffic impact study to be performed.	BTPC, BTC	Short-term	
*	4. Conduct an evaluation of abandoned service stations in the township and explore a means for clean up and redevelopment. Examine preferred reuse options for these properties as a basis of future discussions with prospective developers.	BTPC, BTC	Short-term	
*	5. Large Retail Store (D2) and the CS Shopping Center zoning district could be provided with updated standards to reduce the aesthetic impacts often associated with these uses.	BTPC, BTC	Short-term	
*	6. Supplement standards for check cashing establishments (Use D29) to limit hours of operation, and provide design controls such as prohibiting use of bars, chains, or similar security devices that are visible from a public street or sidewalk.	BTPC, BTC	Short-term	
*	7. Provide additional standards for Automotive Sales (Use D17a) that will reduce the visual impact. Such standards could control lighting impacts; provide additional setbacks for display and storage of vehicles; require a permanent building of a minimum square footage for offices, show rooms, and display; and provide additional landscape buffering.	BTPC, BTC	Short-term	

√ - Funding may be available to help implement recommended action. See Listing of potential funding sources in Appendix C.

* - Funding may be available to help implement recommended action through a designated funding source in Appendix C, or as part of an overall zoning and/or subdivision ordinance update through one funding source such as LUPTAP).

DEVELOPMENT TODAY AND PROJECTED CHANGES—RESIDENTIAL

Goal:

Provide safe and adequate housing for present and future residents of all socioeconomic characteristics.

Objectives:

1. Ensure that the zoning ordinance provides for a variety of housing types.
2. Promote the public health, safety, and welfare by ensuring a quality living environment that provides quality housing through sound zoning and subdivision and land development standards and modern building and fire codes

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
✓	1. Continue administering townshipwide Homeowner Occupied Housing Rehabilitation Program to providing monetary assistance to qualified residents.	BTCD, BTC	Ongoing	
	2. Continue to monitor existing and proposed age-restricted developments to ensure they satisfy local market demands.	BTPC, BTC	Ongoing	
	3. Continue overseeing infill development and redeveloped sites to ensure that they are appropriate for the context and setting in which they are located.	BTPC, BTC	Ongoing	
*	4. Examine the R-4 Multifamily Residential District (particularly the minimum lot area standard) to determine its appropriateness within context and location of the township. If appropriate, the R-4 district regulations may be amended to increase the minimum lot area, or portions of the R-4 district could be rezoned to a more appropriate zoning district designation.	BTPC, BTC	Short-term	
*	5. Explore the feasibility of enhancing existing residential areas through the incorporation of alternative housing developments in appropriate locations throughout the township including traditional neighborhood development (TND) and transit-oriented design (TOD).	BTPC, BTC	Short-term	

✓ - Funding may be available to help implement recommended action. See Listing of potential funding sources in Appendix C.

* - Funding may be available to help implement recommended action through a designated funding source in Appendix C, or as part of an overall zoning and/or subdivision ordinance update through one funding source such as LUPTAP).

NATURAL RESOURCES

Goal:

To maintain and enhance the natural resources found in the township.

Objectives:

1. Recognize that the protection of natural resources has direct effects on the health, welfare and safety of the community.
2. Provide for the protection of critical natural resources including watersheds, groundwater, floodplain, floodplain soils, wetlands, steep slopes, woodlands, and streams.

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (√)
√	1. Consider participation in the National Flood Insurance Program's Community Rating System to reduce flood insurance premiums for township homeowners, renters, and business owners.	BTBPZ, TE, BTPC, BTC	Short-term	
*	2. Amend the subdivision and land development ordinance to regulate land clearing and topsoil removal over large areas and limiting permissible site area disturbance.	BTPC, BTC	Short-term	
*	3. Amend the subdivision and land development ordinance to require replacement of trees that are removed or destroyed during any stage of development.	BTPC, BTC	Short-term	
*	4. Continue to work with organizations and programs such as TreeVitalize and the Coastal Zone Management to tailor a project that will increase tree cover in the community.	BTPC, BTC	Ongoing	
*	5. Consider amending the zoning ordinance to add riparian buffer requirements.	BTPC, BTC	Short-term	
	6. Consider the creation of an environmental advisory committee (EAC).	BTC	Medium-term	
*	7. Incorporate Low Impact Development (LID) techniques into the zoning ordinance and subdivision and land development ordinance.	BTPC, BTC	Short-term	

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CULTURAL, ARCHITECTURAL, AND HISTORICAL RESOURCES

Goal:

To recognize and protect the cultural, architectural and historical resources of Bristol Township so that they are preserved for future generations.

Objectives:

1. Recognize and protect historic features, including structures, sites, waterways, villages, and landscapes having a special character or use, affecting and affected by their environment.
2. Preserve and protect historic resources in established historic areas and districts.
3. Promote the preservation of historic resources outside of the established historic areas and districts.

Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
1. Conduct a comprehensive survey of the township to identify resources of historical significance.	BTPC	Medium-Term	
2. Continue to support efforts of individuals and groups to identify sites worthy of eligibility on the National Register and efforts to place resources deemed eligible onto the Register.	BTPC, BTC	Ongoing	
* 3. Consider the merits of establishing a historic district ordinance under the authority of Act 167.	BTPC, BTC	Medium-Term	
* 4. Consider applying for Certified Local Government status if a historic district ordinance is established under Act 167.	BTPC, BTC	Medium-Term	
* 5. Continue to control demolition of historic resources through the demolition provisions in the zoning ordinance.	BTBPZ, BTC, ZHB	Ongoing	
* 6. Consider applying for historical markers through the Historical Marker Program of the PHMC or developing a local-based historic marker program to designate the township's significant resources.	BTPC, BTC	Medium-Term	
7. Coordinate with the Pennsylvania Department of Conservation and Natural Resources—Bureau of State Parks to determine the feasibility of restoring strategic segments of the Delaware Canal to its original configuration and condition.	BTPR, BTC	Short-term	
8. Adopt additional historic preservation zoning provisions to encourage preservation of historic buildings and to allow for additional use opportunities (e.g., buffer requirements, use regulations).	BTPC, BTC	Short-term	
9. Consider adopting historic district zoning to protect Newportville and Fergusonville areas by ensuring that new development is consistent with existing building placement and style.	BTPC, BTC	Short-term	
10. Consider adopting design guidelines for villages and special areas such as Newportville, Fergusonville, Edgely, and Croydon.	BTPC, BTC	Short-term	

Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (√)
11. Support the activities of the Friends of Bolton Mansion and consider the establishment of a museum dedicated to the history of Bristol Township and Levittown at the Bolton Mansion.	BTC	Ongoing	
* 12. Seek funding sources for historic resources in need of to rehabilitation.	BTC	Medium-Term	

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PARKS, RECREATION, AND OPEN SPACE PLANNING

Goal:

To provide adequate parks and recreation facilities for all age groups and interests and to promote the preservation of open space as a means to contribute to the quality of life of township residents.

Objectives:

1. Recognize that the provision of parks, recreation opportunities, and open space contribute to the quality of life for township residents by offering relief from stress, enhancement of mental and physical fitness, and the ability to be closer to nature and to escape from the built environment.
2. Make use of existing infrastructure and natural corridors for recreation opportunities.
3. Coordinate and cooperate with governmental agencies and other recreation providers to support their efforts.

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
✓	1. Implement pertinent recommendations of the 1997 <i>Bristol Township Park, Recreation, and Open Space Plan</i> and update if necessary.	BTPC, BTC	Ongoing	
✓	2. Continue to identify appropriate means to reduce or eliminate littering and vandalism of park and recreational facilities such as increased police surveillance or an adopt-a-park program.	BTPR, BTPW, BTC	Ongoing	
✓	3. Provide ongoing upkeep and maintenance of aging recreational facilities and to protect the health and safety of park users. Consider potential funding sources to supplement the township's budget for this purpose.	BTPR, BTPW, BTC	Ongoing	
	4. Continue to promote cooperative use of school district facilities after hours to supplement resident's park and recreational needs.	BTPR, BTC	Ongoing	
✓	5. Establish greenway linear parks with trails along stream corridors and the Delaware Canal where possible.	BTPR, BTC	Short-term	
*	6. Facilitate planning efforts for the East Coast Greenway and the Delaware River Heritage Trail.	BTC	Short-term	
	7. Work with developers to create continuous public access along the Delaware River. Where possible, reinforcement of the public nature of the river should be provided by establishing a strip of land along the river's edge as a public linear park. For every redevelopment on waterfront property, each jurisdiction should set a "condition of approval" dedicating a public riverwalk along the entire river's frontage of the property.	BTPC, BTC	Ongoing	
	8. Coordinate planning with Bucks County to meet township park and recreation needs.	BTC	Ongoing	
	9. Evaluate existing school facilities to determine if they can meet needs for miniparks and community parks.	BTPC, BTC	Short-term	
✓	10. Determine if PECO corridors are appropriate for greenways and coordinate with PECO to provide public access.	BTPC, BTC	Short-term	

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
*	11. Revise the zoning ordinance to incorporate the requirements of Appendix B (Special Zoning Provisions for Areas Adjoining the Delaware Canal) into the zoning ordinance by reference. In order to eliminate inconsistencies and redundancies, the deletion of Section 2124.B (Special Setback from the Delaware Canal State Park) maybe necessary.	BTPC, BTC	Short-term	
✓	12. Survey and evaluate existing natural greenways to determine if enhancement is necessary.	BTPC, BTC	Short-term	

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COMMUNITY FACILITIES AND SERVICES

Goal:

To provide needed and desirable services within the constraints of the township's fiscal abilities.

Objectives:

1. Foster the efficient and cost-effective provision and utilization of community services and facilities (i.e., police, fire protection, medical services, schools and colleges, libraries).
2. Provide adequate public protection and preserve Bristol Township as a safe and desirable community.

Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
1. Assist local fire companies in volunteer recruitment efforts to meet staffing needs.	BTFM, BTC	Short-term	
2. Assist local fire companies with the financial challenges and needs they face.	BTFM, BTC	Ongoing	
3. Coordinate with emergency medical service providers and county officials to ensure community needs are met in the most efficient manner possible.	BTFM, BTC	Short-term	
* 4. Investigate ways to provide additional funding and insurance assistance to the emergency rescue squads.	BTFM, BTC	Short-term	
* 5. Monitor population trends and anticipate needs of aging baby boomers and seniors to ensure that the zoning ordinance provides for both the latest types of elderly care facilities and adequate opportunities for these sites in the township.	BTPC, BTC	Ongoing	
6. Township officials should meet on a regular basis (i.e., annually) with hospital administration to discuss mutual needs and how township officials can help ensure quality health care for residents.	BTC	Ongoing	
7. Maintain and enhance the existing cooperative relationship between the township, the Bristol Township School District, Bucks County Technical High School, and the Bristol campus of the Bucks County Community College.	BTC	Ongoing	
8. Coordinate actions of the township, the Bristol Township School District, the Bucks County Technical High School, and the Bristol campus of the Bucks County Community College to maximize use of tax dollars as facility needs change over time.	BTC	Ongoing	
9. Support activities of the library.	BTC	Ongoing	
10. Continue to seek grant opportunities and alternate funding sources for the implementation of township programs and initiatives.	BTMD	Ongoing	
11. Continue to work with the Bucks County Redevelopment Authority to assist in the redevelopment of property consistent with the goals and objectives of this Plan.	BTMD		
12. Evaluate the need and feasibility of adding additional township staff for municipal administration and other township departments.	BTMD, BTC		
13. Upgrade township records system and develop a Geographic Information System for all administrative departments.	BTMD		

	14. Determine appropriate levels of funding and staffing needed for department operations and necessary upgrades of public facilities.	BTC		
	15. Adopt capital improvements programming to schedule funding and seek money to fund planned work.	BTC		
*	16. Establish a program to obtain information from businesses operating in the township to assure they have a recycling program in place.	BTRC	Short-term	
*	17. Provide a program to offer assistance to businesses and institutions in the township to review their waste management programs and to assist them in their efforts to divert greater amounts of material from the waste stream.	BTRC	Short-term	
*	18. Establish an enforcement program that might entail an annual review/inspection of each business within the community	BTRC	Short-term	

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WATER RESOURCES AND USAGE

Goal:

To protect the township's water quality, ensure an adequate water supply to support future growth and development, provide for stormwater management that focuses on water quality and groundwater recharge, and provide adequate wastewater treatment capacity to allow for future development within the township.

Objectives:

1. Protect groundwater supply in the township by regulating the use of the land in the area around wellheads serving community water supply systems.
2. Control the quality and quantity of stormwater runoff to prevent the degradation of waterways and flooding.
3. Protect wellheads of community water supply systems from contamination by inappropriate land uses.
4. Provide for and/or maintain water supply and wastewater facilities that effectively serve the existing and anticipated service requirements of residents.

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (√)
*	1. Amend the subdivision and land development ordinance to require that a water resource impact study be conducted when a proposed development is not served by a public water supply.	BTPC, BTC	Short-term	
*	2. Formulate and adopt regulations regarding the establishment and protection of wellhead protection zones.	BTPC, BTC	Short-term	
*	3. Determine if design and construction elements related to stormwater collection facilities should be integrated back into the subdivision and land development	BTPC, TE, BTC	Short-term	
	4. Continue to enforce the recommendations of the Delaware River South and the Neshaminy Creek stormwater management plans.	BTPC, BTC	Ongoing	
	5. Continue participation in the development of the Neshaminy Creek stormwater management plan update.	BTPC, BTC	Ongoing	
	6. Continue to ensure compliance with NPDES program and file program reports.	BTBPZ	Ongoing	
*	7. Review ordinances to ensure Bristol Township is implementing state-of-the-art stormwater BMPs.	BTPC, TE, BTC	Short-term	
√	8. Identify flood-prone areas at the municipal level and determine if remediation measures are feasible.	BTPC, TE, BTC	Short-term	
	9. Establish regular maintenance programs for stormwater management facilities.	BTC	Short-term	
	10. Evaluate alternative best management practices (BMPs) for maintaining and retrofitting existing substandard stormwater management basins.	BTPC, TE, BTC	Short-term	
*	11. Revise the Act 537 Sewage Facilities Plan in accordance with the recommendations of the Comprehensive Plan Update.	BTC	Short-term	

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TRANSPORTATION AND CIRCULATION

Goal:

To achieve a safe, efficient, rapid, and pleasant circulation system for both necessary and pleasure trips incorporating a variety of modes, including vehicular, bicycle and pedestrian travel.

Objectives:

1. Encourage the expansion and utilization of mass transit and nonautomotive modes of transportation.
2. Maintain and promote vehicular and pedestrian mobility, access, and safety throughout the township.
3. Maintain and promote a cooperative process for the future improvement of critical corridors in the region such as Routes 13 and 413 and New Falls Road.
4. Promote access management techniques along arterial and collector roads including limiting the number and location of access points; marginal access streets; shared driveways; and reverse frontage streets.

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
	1. Work with SEPTA and the Transportation Management Association of Bucks County to ensure that the public transportation needs of its residents are being met.	BTPC, BTC	Ongoing	
	2. Work with SEPTA with the renovation of the Croydon Station and the implementation of the Croydon Transit Revitalization Investment District recommendations.	BTPC, BTC	Ongoing	
	3. 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 consideration for future regional TIPs.	BTPC, BTC	Ongoing	
*	4. Work with the Turnpike Commission to ensure that the needs of motorists and emergency personnel are addressed during the construction of the Interstate 95/Pennsylvania Turnpike Interchange.	BTC	Short-term	
*	5. Ensure that the recommendations of the <i>Neighborhood Enhancement Study—A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues</i> are followed. The township should consult the recommendations of the study as development occurs at or near the areas identified in the plan.	BTC	Short-term	
*	6. Work with PennDOT to ensure that recommendations from the <i>U.S Route 13 Revitalization Plan</i> are included in any future rehabilitation projects undertaken by PennDOT.	BTPC, BTC	Ongoing	
	7. Utilize a context sensitive solutions approach as roadways and bridges in the township are reconstructed.	BTPW, BTPC, BTC	Ongoing	
*	8. Develop specific policies regarding traffic calming, including the participation of any neighborhood that could be impacted by the addition of traffic calming measures.	BTPC, BTC	Short-term	
✓	9. Prepare a study to determine locations for new sidewalks to connect residential and nonresidential land uses. The Levittown neighborhoods should be carefully examined.	BTPC, BTC	Mid-term	

Recommended Implementation Actions		Entity Responsible	Time Frame	Record of Action (✓)
✓	10. Prepare a bicycle plan to determine the best routes to connect existing and anticipated developments with key community locations.	BTPC, BTC	Mid-term	
✓	11. Develop an access management plan to be included in the subdivision and land development review process.	BTPC, BTC	Mid-term	
*	12. Consider the preparation and adoption of an official map indicating future right-of-way, new public roads, and driveway access points in order to implement the access management plan.	BTPC, BTC	Long-term	

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ECONOMIC DEVELOPMENT, REVITALIZATION, AND VITALITY

Goal:

To accommodate the needs of the township's business community and improve the business climate by improving the township's quality of life, workforce, and infrastructure.

Objectives:

1. Provide an attractive economic environment in which the township's existing and future businesses can thrive.
2. Expand the township's tax base through appropriate commercial and industrial development and redevelopment.
3. Enhance the effectiveness and efficiency of the township's operation and financing.

Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (√)
1. Provide a one-stop shop for local business assistance including procedures and trained staff aimed at expeditious help for business owners.	BTBPZ, BTPC, BTC	Short-term	
2. Evaluate impact of existing business taxes on local businesses and industry.	BTPC, BTC	Ongoing	
3. Coordinate local economic development activities with the Bucks County Economic Development Corporation and Bucks County Department of Community Business Development.	BTPC, BTC	Ongoing	
4. Promote use of Enterprise Zone, KOZ, LERTA and Land Recycling programs.	BTPC, BTC	Ongoing	
5. Establish an annual forum between the business community and township officials provide an open dialogue and promote an improved business environment.	BTC	Ongoing	
6. Support and public education and vocational training.	BTC	Ongoing	
* 7. Streamline permitting process to facilitate redevelopment.	BTBPZ, BTC	Short-term	
8. Coordinate investment in telecommunication infrastructure with providers.	BTC	Ongoing	
9. Improve traffic mobility through the implementation of the recommendations of Chapter 9 Transportation and Circulation.	BTC	Ongoing	
10. Enhance natural resource integrity through the implementation of the recommendations of Chapter 4 Natural Resources.	BTC	Ongoing	
11. Enhance cultural facilities through the implementation of the recommendations of Chapter 5 Cultural, Architectural and Historical Resources.	BTC	Ongoing	
12. Enhance public safety through the implementation of the recommendations found in Chapter 7 Community Facilities and Services.	BTC	Ongoing	
* 13. Amend the township zoning ordinance to require a fiscal impact study for zoning changes.	BTPC, BTC	Short-term	
14. Follow recommended procedures to develop and ultimately adopt a CIP, which will facilitate implementation of pertinent Comprehensive Plan objectives.	BTC	Ongoing	
15. Adapt current five-year Strategic Plan to include policies in the comprehensive plan.	BTPC, BTC	Short-term	
16. Prioritize actions recommended in Comprehensive Plan Update.	BTPC, BTC	Ongoing	

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FUTURE LAND USE

Goal:

To maintain and/or reestablish land use patterns which contribute to healthy, convenient, and prosperous living and working conditions, including employment opportunities for township residents.

Objectives:

1. Promote the planning principles established in this Plan for future development and redevelopment throughout the township.
2. To address the planning and development problems and issues identified in the 11 Special Study Areas (as shown in Map 4).

	Recommended Implementation Actions	Entity Responsible	Time Frame	Record of Action (✓)
	1. Encourage smart growth and sustainability for future development through the use of “green design” such as LEED certification, the use of porous paving, green roofs, rain gardens, and other appropriate best management practices (BMPs).	BTPC, BTC	Ongoing	
	2. Implement appropriate recommendations of this Plan and other strategic plans (e.g., <i>Bucks County Waterfront Revitalization Plan</i> , <i>Croydon Transit Investment District Study</i> , and <i>U.S. Route 13 Revitalization Plan</i>) over the next decade and beyond.	BTPC, BTC	Ongoing	
	3. Continue to proactively identify appropriate alternatives for infill redevelopment projects that are compatible with the scale and context of their surroundings.	BTPC, BTC	Ongoing	
*	4. Ensure that the township’s land use regulations are consistent with current and future trends in the office, retail, hospitality, and industrial sectors to facilitate development associated with the Pennsylvania Turnpike/Interstate 95 Interchange.	BTPC, BTC	Short-term	
	5. Provide opportunities for cooperative marketing of local businesses to support economic growth.	BTC	Ongoing	
	6. Use the <i>Bucks County Waterfront Revitalization Plan</i> as the guiding document for future land use and development of Bristol’s waterfront.	BTPC, BTC	Ongoing	
*	7. Implement a mixed-use overlay zoning district for the Rohm and Haas property.	BTPC, BTC	Ongoing	
✓	8. Prepare a study that evaluates the alternatives for the Minot Avenue neighborhood. The study should include a cost-benefit analysis to support any recommendations.	BTPC, BTC	Short-term	
*	9. Acquire the former Jack’s Marina property if current development proposals are not carried out.	BTC	Ongoing	
✓	10. Improve and enhance Overlook Park by protecting the tidal marsh and wetlands from riverbank development and removing man-made debris from site.	BTPR, BTPW, BTC	Short-term	
✓	11. Incorporate multipurpose trails along the Neshaminy Creek as proposed in the <i>Bucks County Park and Recreation Plan</i> .	BTC	Medium-term	
*	12. Amend the township’s land use regulations to implement recommendations of the Croydon TRID study.	BTPC, BTC	Short-term	

Recommended Implementation Actions		Entity Responsible	Time Frame	Record of Action (✓)
	13. Implement recommendations from the <i>Bucks County Waterfront Revitalization Plan</i> related to address streets, riverfront corridors, and municipal gateways.	BTC	Medium-term	
	14. Prepare a study to address flooding and stormwater management throughout the study area.	BTC	Medium-term	
✓	15. Partner with Middletown Township to make streetscape improvements to New Falls Road.	BTC	Medium-term	
✓	16. As part of a townshipwide study on access management issues focus on improvements to New Falls Road, South Oxford Valley Road, and Levittown Parkway.	BTPC, BTC	Short-term	
✓	17. Explore the possibility of incorporating portions of the PECO property into the existing township greenway.	BTC	Short-term	
✓	18. Continue to support the activities of the Freedom Neighborhood I, neighborhood improvement associations, and the Weed and Seed initiative.	BTDCD, BTC	Ongoing	
	19. Consider increased code enforcement efforts and sponsorship of clean up days.	BTBPZ, BTC	Ongoing	
	20. Continue to utilize the township's CDBG funds for home rehabilitations and other community improvement activities and the first-time homebuyers program for down payment assistance in the study area.	BTDCD, BTC	Ongoing	
	21. Use the <i>U.S. Route 13 Revitalization Plan</i> as the guiding document for future land use and development in the corridor.	BTC	Ongoing	
	22. Continue to work with PennDOT to implement recommendations of the <i>U.S. Route 13 Revitalization Plan</i> .	BTPC, BTC	Short-term	
*	23. Promote redevelopment in the vicinity of the Route 13/Pennsylvania Turnpike Interchange with mixed-use development consisting of offices, hotels, entertainment facilities, and restaurants. Consider the provision of local ordinances and regulations that can foster a high-quality, unified master plan of this area.	BTPC, BTC	Short-term	
✓	24. Acquire underutilized parcels for open space expansion along the Delaware Canal State Park.	BTC	Medium-term	
	25. Establish a gateway feature along the Bensalem Township border to include appropriate signage, landscaping and lighting.	BTC	Medium-term	
✓	26. Consider adopting historic district zoning and/or village design guidelines for the study area.	BTPC, BTC	Medium-term	
	27. Implement recommendations of the <i>Neighborhood Enhancement Study, A Study of the Proposed Pennsylvania Turnpike/Interstate 95 Interchange and Existing Infrastructure Issues in Bensalem, Bristol, and Middletown Townships</i> .	BTPC, BTC	Ongoing	
	28. Continue to monitor the area for land use changes and to identify potential land use conflicts.	BTPC, BTC	Ongoing	

Recommended Implementation Actions		Entity Responsible	Time Frame	Record of Action (√)
	29. Encourage employers within the 3M Industrial Park to hire and train residents of the Residential Opportunity Neighborhoods.	BTC	Ongoing	
*	30. Review existing overlay district regulations and design standards to determine if changes are warranted that may provide additional flexibility to developers.	BTPC, BTC	Short-term	
*	31. Consider expanding the design guidelines to provide more detailed descriptions and illustrations.	BTPC, BTC	Short-term	
	32. Work with the Bucks County Redevelopment Authority to target underutilized lands in the study area for redevelopment.	BTC	Medium-term	
	33. Establish a gateway feature along the Middletown Township border to include appropriate signage, landscaping, and lighting.	BTC	Medium-term	
*	34. Consider implementing an overlay district similar to and complimentary to the Town Center District. Appropriate building scale, setback, and façade treatment regulations should be prepared to enhance the architectural unity of the study area.	BTPC, BTC	Short-term	

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APPENDIX C
FUNDING AND TECHNICAL ASSISTANCE SUMMARY

APPENDIX C

Funding and Technical Assistance Summary

Name of Program	General Description of Program	Administering Agency
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 Nonpoint Source Program
Chesapeake Bay Program	PA Chesapeake Bay Educational Mini-Grant Program. Supports projects within the Chesapeake Bay Drainage Basin that promote the theme, We All Live Downstream.	PA DEP Pennsylvania Association of Conservation Districts, Inc.
Coastal Zone Management (CZM) Program	CZM provides technical and financial assistance to local governments and state agencies to control development in coastal hazard areas, improve public access, protect natural resources, expand strategies to improve local economies, promote proper planning, conserve coastal and wetland resources, and control coastal non-point source pollution.	DEP Office for River Basin Cooperation Trust
Communities of Opportunity	Provides grants to municipalities, redevelopment authorities and housing authorities for community revitalization, economic development, and low-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: 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
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 (Phila. Office)
Conservation Corps, PA.	Provides funding for work crews for community projects, such as trail improvements.	PA DCNR
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 Educ. Agency


Name of Program	General Description of Program	Administering Agency
DEP & Environmental Systems Research Institute Inc.	GIS Software Grants	PA DEP
Downtown Pennsylvania Program	<p>Offers full-time management to organize and implement a Business District Authority, that provides financing for additional services in a commercial area.</p> <p>The Commercial Revitalization program funds physical improvement projects that are consistent with an action plan. Projects may include site improvements, facade renovations and adaptive reuse of downtown buildings.</p>	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. A 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
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.	PA Emergency Management Agency
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
EPA Section 319 Nonpoint Source Pollution Prevention Program	Provides money for projects that help control nonpoint 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.	Federal Emergency Management Agency

Name of Program	General Description of Program	Administering Agency
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 Program	Aids in the preservation of farmland and open space, clean up of abandoned mines, restoration of watersheds, and providing new and upgraded water and sewer systems.	PA DEP
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."	Federal, administered by PA Historical and Museum Commission
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.	Federal, administered by PA Historical and Museum Commission
Historic Preservation Tax Credits	Offers Federal income tax credits for a percentage of the qualified capital costs to rehabilitate a certified historic buildings, provided the exterior is restored. The program is generally limited to income-producing properties.	National Park Service
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.	PA Historical and Museum Commission
Keystone Opportunity Zone	State program provides a range of benefits to locally-nominated, State-designated areas that are financially distressed. One major benefit involves greatly reduced local real estate taxes for an initial set of years.	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
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
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 Housing Finance Agency
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

Name of Program	General Description of Program	Administering Agency
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
National Tree Trust	Supports the work of local nonprofit urban forestry organizations around the country.	online information available soon
Neighborhood Assistance Tax Credit Program	Authorizes State corporate income tax credits to private companies to donate funds for services to low-income persons or impoverished neighborhoods. Partnerships are required between the business and a neighborhood organization.	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
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
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
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
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
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)

Name of Program	General Description of Program	Administering Agency
Recycling Market Development Loan Fund	Provides low-interest loans to businesses to purchase recycling source-separating equipment.	PA DEP Bureau of Land Recycling and Waste Management
SBA Financing	Offers low-interest financing for smaller businesses, including: <ul style="list-style-type: none"> - 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 a 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
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
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 streambank erosion.	PA DEP Bureau of Waterways Engineering
TEA 21 Trans-potation 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 PennDOT

Name of Program	General Description of Program	Administering Agency
The Environmental Challenge Fund	To support restoration, natural resource enhancement, and wildlife habitat improvement projects, that are concrete in nature and for which the planning has already been completed. Awards are made on the basis of direct environmental benefits; certain educational aspects and recreational features that are essential to the overall success of the project may also be considered for funding. If the proposed project will spawn new ideas/approaches or lead to additional activities or projects this information should also be reflected in your responses.	online information
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 the four counties listed above. 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
Water Supply Plan & Well-Head Protection Grants	Provides grants to counties to plan for water supplies at the county level and to implement programs to protect the wellheads of public wells.	PA DEP Bureau of Water Supply
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
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, in addition to [Pennsylvanian](#) magazine. 

www.inventpa.com	The Governor's Center for Local Government Services oversees a range of financial and strategic support programs. Whether you need help in developing intergovernmental cooperation ventures or need assistance with financial recovery, the Center's local government experts can help. You can find out more about each of these programs on the Community Resource Directory.
www.gpo.gov/su_docs/aces/aces140.html	The Federal Register is the official daily publication for Rules, Proposed Rules, and Notices of Federal agencies and organizations, as well as Executive Orders and other Presidential Documents.
www.pueblo.gsa.gov/call/	This site provides useful information about Federal programs and benefits. The Federal Citizen Information Center has gathered contact information and resources to help you get in touch with the appropriate official for each program.
www.firstgov.gov	FirstGov offers an extensive collection of online information, services and resources. You can link to web pages from federal and state government agencies.
www.firstgov.gov	FirstGov offers an extensive collection of online information, services and resources. You can link to web pages from federal and state government agencies.
www.firstgov.gov	FirstGov offers an extensive collection of online information, services and resources. You can link to web pages from federal and state government agencies.
www.governmentguide.com	Government Guide has federal, state and local resources personalized for you. Enter your location, then explore the features.
www.fdncenter.org	The Foundation Finder is a free look-up tool that provides basic profiles of 65,000 private and community foundations.

Source: Top 7 Grant Websites

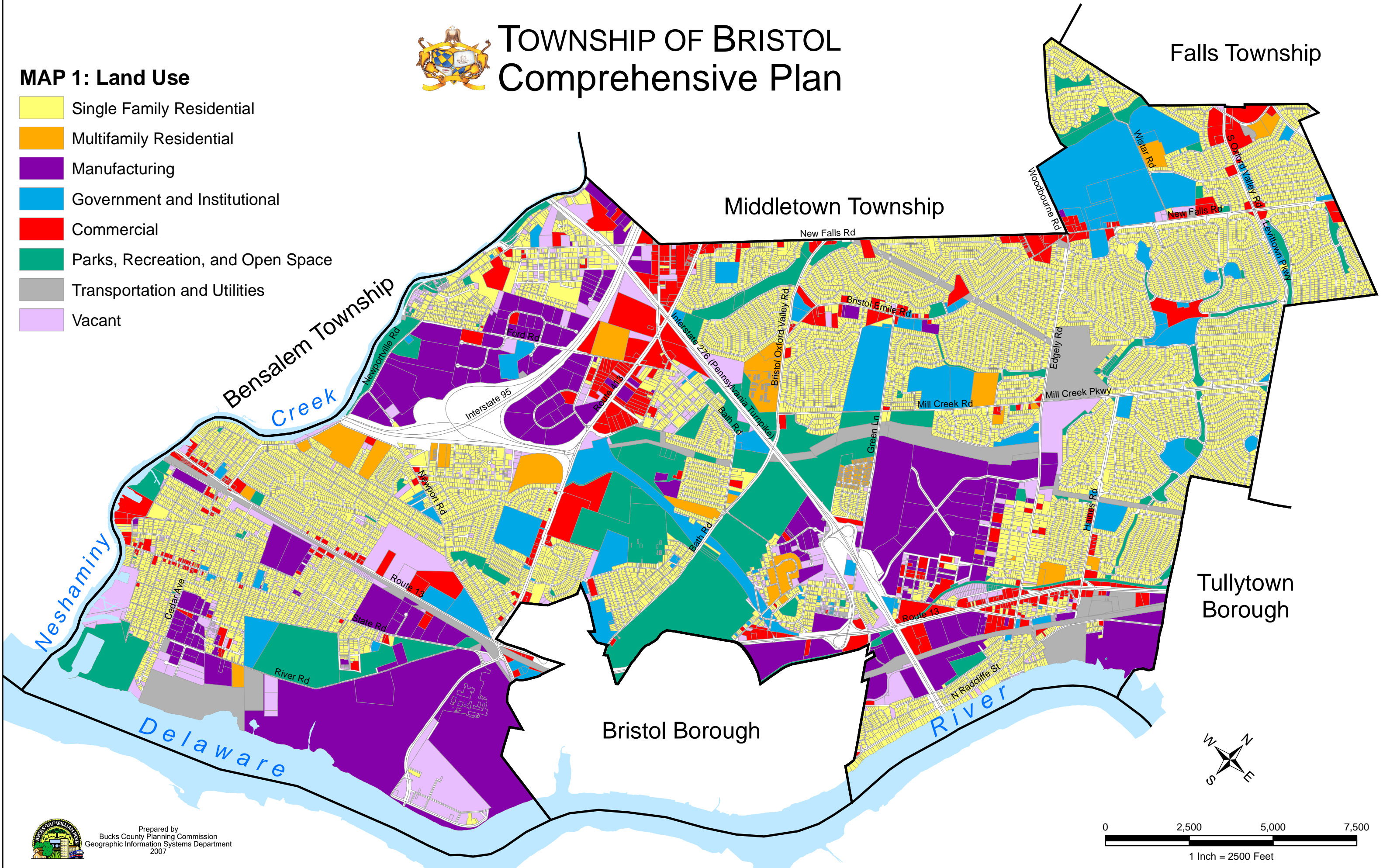
By Shannon Jankowski, PSAB Grants/Research Analyst



TOWNSHIP OF BRISTOL Comprehensive Plan

MAP 1: Land Use

-  Single Family Residential
-  Multifamily Residential
-  Manufacturing
-  Government and Institutional
-  Commercial
-  Parks, Recreation, and Open Space
-  Transportation and Utilities
-  Vacant

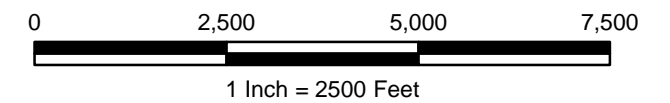


Falls Township

Middletown Township

Tullytown
Borough

Bristol Borough





TOWNSHIP OF BRISTOL Comprehensive Plan

MAP 2: Hydrological Resources

— Streams

Watershed Classifications

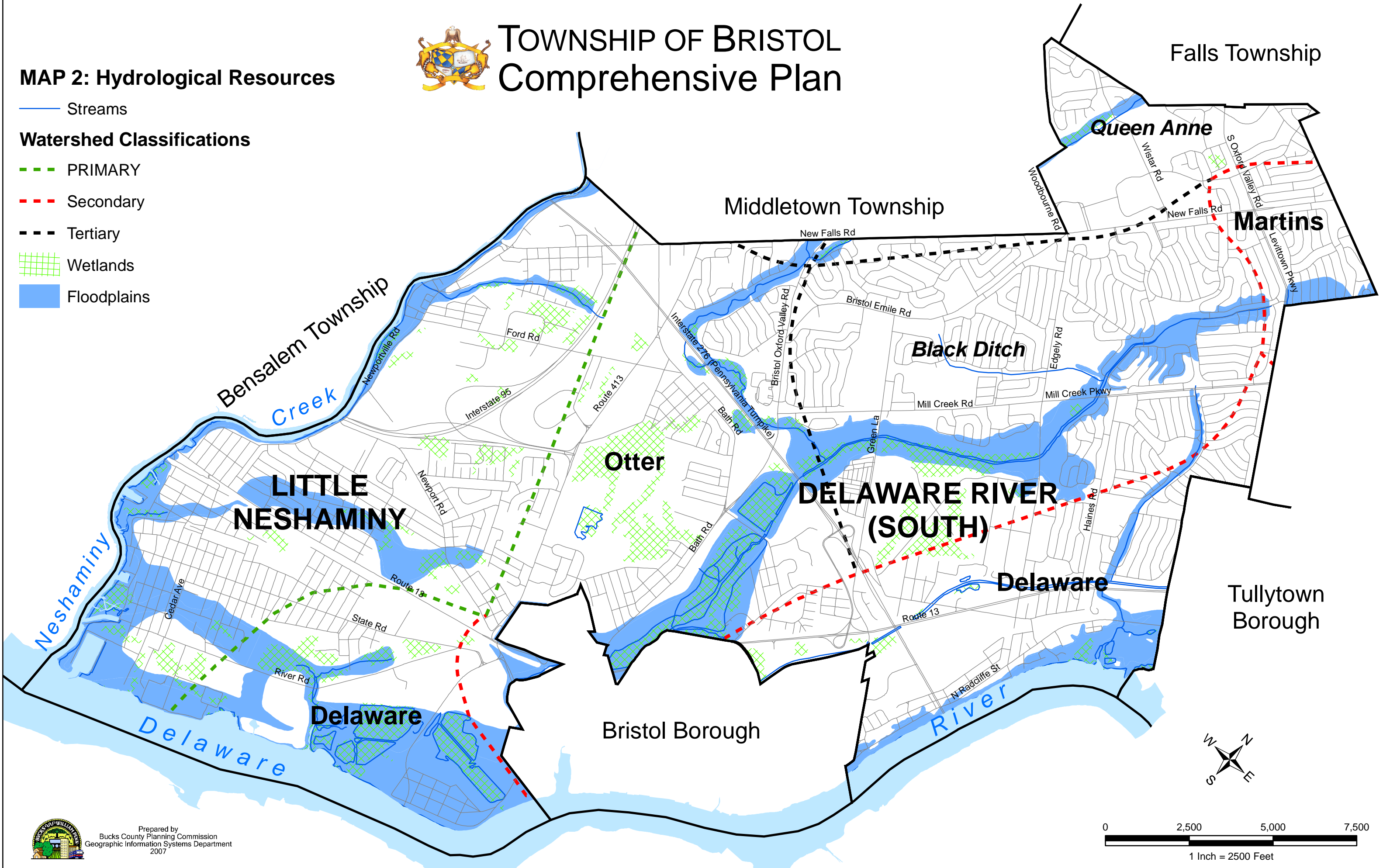
--- PRIMARY

--- Secondary

--- Tertiary

Wetlands

Floodplains



Falls Township

Queen Anne

Martins

Middletown Township

Bensalem Township
Creek

Black Ditch

LITTLE
NESHAMINY

Otter

DELAWARE RIVER
(SOUTH)

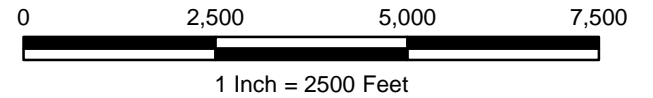
Delaware

Tullytown
Borough

Delaware

Bristol Borough













River

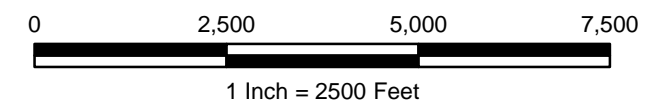
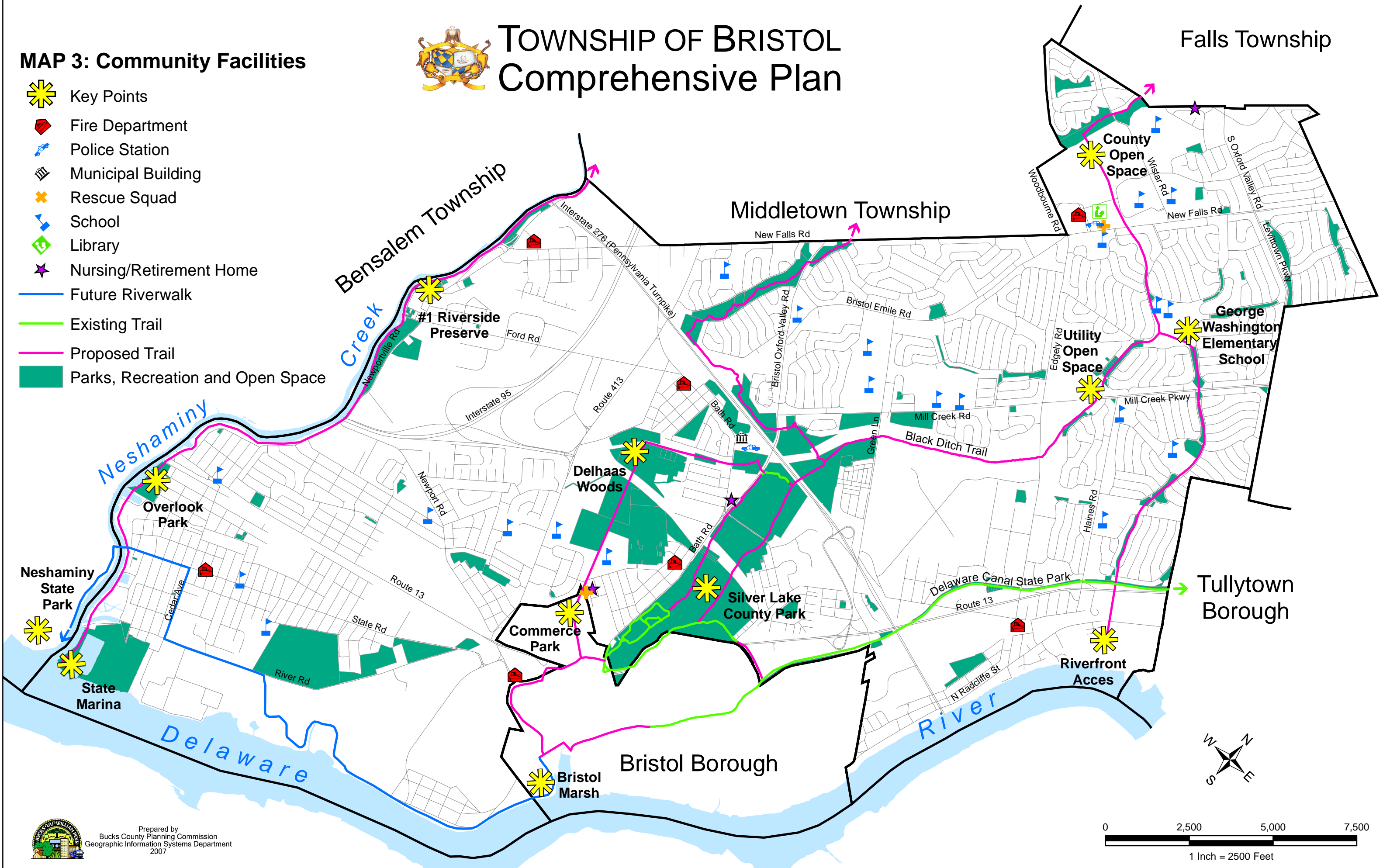




TOWNSHIP OF BRISTOL Comprehensive Plan

MAP 3: Community Facilities

-  Key Points
-  Fire Department
-  Police Station
-  Municipal Building
-  Rescue Squad
-  School
-  Library
-  Nursing/Retirement Home
-  Future Riverwalk
-  Existing Trail
-  Proposed Trail
-  Parks, Recreation and Open Space



MAP 4: Special Study Areas

- Pennsylvania Turnpike/I-95 Interchange
- Croydon
- Newportville/Fergusonville & Interchange Area
- Levittown/Fairless Hills
- Town Center Overlay District
- Northern Gateway
- 3M/Airport Road
- Residential Opportunity Neighborhoods
- Route 13 Corridor (East-West)
- Neshaminy Creek Corridor
- Waterfront Area (North-South)



TOWNSHIP OF BRISTOL Comprehensive Plan

