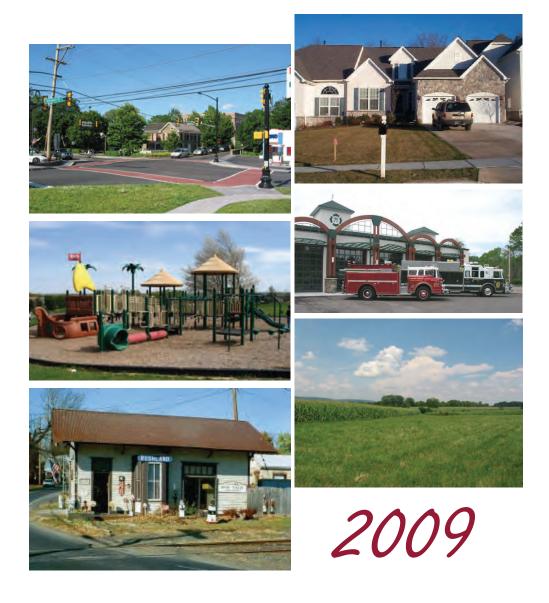
NEWTOWN AREA JOINT COMPREHENSIVE PLAN

Bucks County, Pennsylvania





NEWTOWN AREA JOINT Comprehensive Plan Update

NEWTOWN AREA JOINT ZONING COUNCIL

Newtown Township

Rob Ciervo Phillip Calabro Gerald Schenkman Thomas Jirele Mike Gallagher

Upper Makefield Township

Daniel Worden Robert West Conrad Baldwin David Kulig Daniel Rattigan

Wrightstown Township

Chester Pogonowski Jane Magne Robert S. Lloyd

NEWTOWN AREA JOINT PLANNING COMMISSION

Newtown Township

Jay Sensibaugh Brandon Wind

Upper Makefield Township

Walter S. Wydro, Chairperson Mary Ryan

Wrightstown Township

Frank E. Davis, Vice Chairperson Lary Whelan, Jr.

RESOLUTION NO. 2009 - R - 25

A RESOLUTION OF THE BOARD OF SUPERVISORS OF NEWTOWN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, ADOPTING THE NEWTOWN AREA JOINT COMPREHENSIVE PLAN

WHEREAS, the Pennsylvania Municipalities Planning Code permits the preparation of a multi-municipal comprehensive plan; and

WHEREAS, Newtown Township, Upper Makefield Township, and Wrightstown Township have formed the Newtown Area Joint Zoning Council and Joint Planning Commission; and

WHEREAS, the Newtown Area Joint Zoning Council has determined that it is in the best interests of the jointure to prepare a multi-municipal comprehensive plan to assist in future planning and zoning efforts; and

WHEREAS, the Bucks County Planning Commission under contract with the Townships of Newtown, Upper Makefield, and Wrightstown has prepared a joint Comprehensive Plan; and

WHEREAS, the joint Comprehensive Plan has been reviewed by the Newtown Area Joint Planning Commission, the Newtown Township Planning Commission, the Upper Makefield Township Planning Commission, the Wrightstown Township Planning Commission, and the Bucks County Planning Commission and all bodies recommend its adoption; and

WHEREAS, the Comprehensive Plan has been forwarded to the adjoining municipalities as well as the Council Rock District for review and comments; and

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

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

NOW THEREFORE IT IS HEREBY RESOLVED, by the Board of Supervisors of Newtown Township that the 2009 Newtown Area Joint Comprehensive Plan is hereby adopted in full including the attached Newtown Area Joint Comprehensive Plan, 2009 Errata Sheet, all of the maps and charts set forth therein and all of the appendices attached thereto.

SO RESOLVED THIS 23rd day of September, A.D., 2009.

NEWTOWN TOWNSHIP BOARD OF SUPERVISORS

Pre-20

Robert Ciervo, Chairman

Mighael Gallagher, Vice Chairman

the Matthew Benchener, Secretary/Treasurer

Jerry Schenkman, Member

Phillip Calabro, Member

RESOLUTION NO. <u>2009–9–</u>16

A RESOLUTION OF THE BOARD OF SUPERVISORS OF UPPER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, ADOPTING THE NEWTOWN AREA JOINT COMPREHENSIVE PLAN

WHEREAS, the Pennsylvania Municipalities Planning Code permits the preparation of a multi-municipal comprehensive plan; and

WHEREAS, Newtown Township, Upper Makefield Township, and Wrightstown Township have formed the Newtown Area Joint Zoning Council and Joint Planning Commission; and

WHEREAS, the Newtown Area Joint Zoning Council has determined that it is in the best interests of the jointure to prepare a multi-municipal comprehensive plan to assist in future planning and zoning efforts; and

WHEREAS, the Bucks County Planning Commission under contract with the Townships of Newtown, Upper Makefield, and Wrightstown has prepared a joint Comprehensive Plan; and

WHEREAS, the Joint Comprehensive Plan has been reviewed by the Newtown Area Joint Planning Commission, the Newtown Township Planning Commission, the Upper Makefield Township Planning Commission, the Wrightstown Township Planning Commission, and the Bucks County Planning Commission and all bodies recommend its adoption; and

WHEREAS, the Comprehensive Plan has been forwarded to the adjoining municipalities as well as the Council Rock District for review and comments; and

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

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

NOW THEREFORE IT IS HEREBY RESOLVED, by the Board of Supervisors of Upper Makefield Township that the 2009 Newtown Area Joint Comprehensive Plan is hereby adopted in full including the attached Newtown Area Joint Comprehensive Plan, 2009 Errata Sheet, all of the maps and charts set forth therein and all of the appendices attached thereto.

SO RESOLVED THIS 16th day of September, A.D., 2009.

UPPER MAKEFIELD TOWNSHIP BOARD OF SUPERVISORS

Dan Rattigan, Chairman Dan Worden, Vice-Chairman aus Robert West Conrad Baldwin Dave Kulig

RESOLUTION NO. 2009・12-02-03

A RESOLUTION OF THE BOARD OF SUPERVISORS OF UPPER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, ADOPTING THE NEWTOWN AREA JOINT COMPREHENSIVE PLAN

WHEREAS, the Pennsylvania Municipalities Planning Code permits the preparation of a multi-municipal comprehensive plan; and

WHEREAS, Newtown Township, Upper Makefield Township, and Wrightstown Township have formed the Newtown Area Joint Zoning Council and Joint Planning Commission (the "Jointure"); and

WHEREAS, the Newtown Area Joint Zoning Council has determined that it is in the best interests of the jointure to prepare a multi-municipal comprehensive plan to assist in future planning and zoning efforts; and

WHEREAS, the Bucks County Planning Commission under contract with the Townships of Newtown, Upper Makefield, and Wrightstown has prepared a joint Comprehensive Plan; and

WHEREAS, the Joint Comprehensive Plan has been reviewed by the Newtown Area Joint Planning Commission, the Newtown Township Planning Commission, the Upper Makefield Township Planning Commission, the Wrightstown Township Planning Commission, and the Bucks County Planning Commission and all bodies recommend its adoption; and

WHEREAS, the Comprehensive Plan has been forwarded to the adjoining municipalities as well as the Council Rock District for review and comments; and

WHEREAS, pursuant to the MPC, the Board of Supervisors of Upper Makefield Township held a public hearing on September 16, 2009 and adopted the Comprehensive Plan shortly following the close of that hearing; and

WHEREAS, Newtown Township on September 23, 2009 adopted the Comprehensive Plan with minor revisions as set forth in the attached copy of the Comprehensive Plan which includes an Errata Sheet Dated October 1, 2009; and

WHEREAS, it is the best interest of the Jointure that all three member municipalities adopt identical version of the Comprehensive Plan; and

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

NOW THEREFORE IT IS HEREBY RESOLVED, by the Board of Supervisors of Upper Makefield Township that the 2009 Newtown Area Joint Comprehensive Plan is hereby adopted in full including the attached Newtown Area Joint Comprehensive Plan, and the Errata Sheet dated October 1, 2009, all of the maps and charts set forth therein and all of the appendices attached thereto.

SO RESOLVED THIS 2nd day of December, A.D., 2009.

UPPER MAKEFIELD TOWNSHIP BOARD OF SUPERVISORS

Dan Rattigan, Chairman Dan Worden, €e-Cháirman **Bobert** West Dave Kulig

A RESOLUTION OF THE BOARD OF SUPERVISORS OF WRIGHTSTOWN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, ADOPTING THE NEWTOWN AREA JOINT COMPREHENSIVE PLAN

WHEREAS, the Pennsylvania Municipalities Planning Code permits the preparation of a multi-municipal comprehensive plan; and

WHEREAS, Newtown Township, Upper Makefield Township, and Wrightstown Township have formed the Newtown Area Joint Zoning Council and Joint Planning Commission; and

WHEREAS, the Newtown Area Joint Zoning Council has determined that it is in the best interests of the jointure to prepare a multi-municipal comprehensive plan to assist in future planning and zoning efforts; and

WHEREAS, the Bucks County Planning Commission under contract with the Townships of Newtown, Upper Makefield, and Wrightstown has prepared a joint Comprehensive Plan; and

WHEREAS, the joint Comprehensive Plan has been reviewed by the Newtown Area Joint Planning Commission, the Newtown Township Planning Commission, the Upper Makefield Township Planning Commission, the Wrightstown Township Planning Commission, and the Bucks County Planning Commission and all bodies recommend its adoption; and

WHEREAS, the Comprehensive Plan has been forwarded to the adjoining municipalities as well as the Council Rock District for review and comments; and

WHEREAS, pursuant to the MPC, the Board of Supervisors of Upper Makefield Township held a public hearing on September 16, 2009 and adopted the Comprehensive Plan shortly following the close of that hearing; and

WHEREAS, Newtown Township on September 23, 2009 adopted the Comprehensive Plan with minor revisions as set forth in the attached copy of the Comprehensive Plan which includes an Errata Sheet Dated October 1, 2009; and

WHEREAS, it is the best interest of the Jointure that all three member municipalities adopt identical version of the Comprehensive Plan; and

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

NOW THEREFORE IT IS HEREBY RESOLVED, by the Board of Supervisors of Wrightstown Township that the 2009 Newtown Area Joint Comprehensive Plan is hereby adopted in full including the attached Newtown Area Joint Comprehensive Plan, 2009 Errata Sheet, all of the maps and charts set forth therein and all of the appendices attached thereto.

SO RESOLVED THIS 7th day of December, A.D., 2009.

WRIGHTSTOWN TOWNSHIP BOARD OF SUPERVISORS

Tound

Chester Pogonowski, Chair

Jane Magne, Vice Chair

Robert Lloyd, Member

WRIGHTSTOWN TOWNSHIP, Bucks County, Pennsylvania

2203 Second Street Pike Wrightstown, PA 18940 215-598-3313 215-598-0529 FAX



RESOLUTION NO. 2009-023

A RESOLUTION OF THE BOARD OF SUPERVISORS OF WRIGHTSTOWN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, ADOPTING THE NEWTOWN AREA JOINT COMPREHENSIVE PLAN

WHEREAS, the Pennsylvania Municipalities Planning Code permits the preparation of a multi-municipal comprehensive plan; and

WHEREAS, Newtown Township, Upper Makefield Township, and Wrightstown Township have formed the Newtown Area Joint Zoning Council and Joint Planning Commission; and

WHEREAS, the Newtown Area Joint Zoning Council has determined that it is in the best interests of the jointure to prepare a multi-municipal comprehensive plan to assist in future planning and zoning efforts; and

WHEREAS, the Bucks County Planning Commission under contract with the Townships of Newtown, Upper Makefield, and Wrightstown has prepared a joint Comprehensive Plan; and

WHEREAS, the joint Comprehensive Plan has been reviewed by the Newtown Area Joint Planning Commission, the Newtown Township Planning Commission, the Upper Makefield Township Planning Commission, the Wrightstown Township Planning Commission, and the Bucks County Planning Commission and all bodies recommend its adoption; and

WHEREAS, the Comprehensive Plan has been forwarded to the adjoining municipalities as well as the Council Rock District for review and comments; and

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

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

NOW THEREFORE IT IS HEREBY RESOLVED, by the Board of Supervisors of Wrightstown Township that the 2009 Newtown Area Joint Comprehensive Plan is hereby adopted in full including the attached Newtown Area Joint Comprehensive Plan, 2009 Errata Sheet, all of the maps and charts set forth therein and all of the appendices attached thereto.

SO RESOLVED THIS 21st day of September, A.D., 2009.

ATTEST:

R

David R. Nyman, Secretary

WRIGHTSTOWN TOWNSHIP **BOARD OF SUPERVISORS**

Mun Chester Pogonowska, Chair

Jane Magne,

Robert Lloyd, Member

TABLE OF CONTENTS

| Purpose of the Plan | | |
|------------------------------|---|--|
| Capturing the Future | | |
| Goals and Guiding Principles | | |
| Principle 1 | Promote Smart Growth | |
| Principle 2 | Promote Sustainable Development and Protect Natural Resources | |
| Principle 3 | Provide for Mobility and Connections | |
| Principle 4 | Preserve Open Space and Protect Agriculture | |
| Principle 5 | Livable Communities | |
| Principle 6 | Provide Parks and Recreation | |
| Principle 7 | Sustain and Support our Commercial and Jobs Base | |
| Principle 8 | Protect Historic Resources | |
| Principle 9 | Preserve our Villages | |

LIST OF MAPS

| Map 1 | Existing Land Use |
|--------|---------------------------------|
| Map 2 | Future Land Use |
| Map 3 | Floodplain and Alluvial Soils |
| Map 4 | Wetlands and Watersheds |
| Map 5 | Steep Slopes |
| Map 6 | Forest Cover |
| Map 7 | Agricultural Soils |
| Map 8 | Highway Classifications |
| Map 9 | Ground Water Limitation |
| Map 10 | Community Facilities |
| Map 11 | Park, Recreation and Open Space |
| Map 12 | Historic and Cultural Resources |
| | |

PURPOSE OF THIS PLAN

The Newtown area communities decided in the 1970s that they were not isolated towns and that their futures were intertwined. Traffic from one town traveled through the neighboring towns. They were all part of the same school district. Streams and creeks crossed municipal boundaries, and the central core of business and commerce in Newtown could not thrive without support from nearby townships.

What is so remarkable about this alliance of local governments coming together? Pennsylvania has a long and strong tradition of local government control. The Newtown area elected officials understood the value of cooperation but also realized that compromises would be needed to work for a better community. What they agreed to and accomplished remains unique in Pennsylvania ... and a model statewide for regional cooperation.

In 1983, the jointure municipalities adopted their first Joint Municipal Comprehensive Plan. The foundations for the plan and its policies still resonate today as sound community building principles. Some of the plan goals were: preservation of natural resources and agricultural areas; protecting groundwater areas; encouraging development in areas served by public facilities such as water and wastewater systems; controlling commercial and industrial development by guiding them into logical locations; supporting the Newtown bypass; limiting quarry development; and protecting the heritage and history of the area.

The 1983 plan was the basis for the Joint Municipal Zoning Ordinance, the first of its kind in Pennsylvania. Cooperation among the municipal planning commissions and boards of elected officials was established so that the business of zoning and land use planning could be managed regionally. Through deliberation and cooperation, three township governments can maintain close contact with their residents while simultaneously paying attention to important regional issues.

In 2006, the Pennsylvania Department of Community and Economic Development awarded the Jointure municipalities a grant to update its comprehensive plan.

This Plan is the result of several years of discussion about the future of the townships of Newtown, Wrightstown, and Upper Makefield. The challenges faced by these communities are difficult, and affect the daily lives of our residents:

How to manage future growth and development? How to continue to preserve our important farmlands, natural areas, and open spaces? How to control traffic and ensure safe travel? How to protect and sustain safe neighborhoods, convenient shopping, and good community facilities? How to live sustainably in a period of energy uncertainty? How to protect the special history of the area?

The plan contains nine guiding principles for the future. The Comprehensive plan is blueprint for the future. It is not law or ordinance and cannot be used as a basis for approving or denying a plan for development. It can be used by the jointure municipalities to guide the preparation of ordinances and regulations and to help direct public expenditures for community investments in open space, transportation, and community facilities.

PURPOSE OF THIS PLAN

PURPOSE OF THIS PLAN

CAPTURING THE FUTURE

The purpose of a comprehensive plan is to set the **vision** for the future of the community and **principles** to guide a physical plan for realizing this vision. The vision set forth by this plan is focused on continuing to maintain the quality of life in the jointure for present and future residents. To capture this future, Jointure municipalities will:

Cooperate Coordinate Conserve Connect Compete Be Current

Cooperation among the three municipalities is necessary for the continued success of the growth management program. Cooperation extends beyond the three member township to:

Council Rock School District Newtown Borough County of Bucks Surrounding municipalities Providers of community services

Coordination of the land use vision must be fostered within each municipal government so that each board and commission responsible for guiding the community works together, Coordination of land use planning with other components of physical development – from highways to sewers – requires elected officials to consider traffic and transportation effects of land use decisions and to keep wastewater plans up to date.

Conservation of open spaces, farmland, natural resources, energy, and historic sites is central to the mission of the Jointure and its comprehensive plan. Progress during the past decade on conserving farmland, parkland, and natural areas is a firm foundation for growth management and future conservation.

Connections between neighborhoods, parks, open spaces, shopping areas, jobs, and the highway network are needed to allow the area to function safely and cohesively.

Competing for business and jobs by fostering economic vitality through land use and planning decisions will maintain the vibrancy of the Newtown business core and the small-scale business locations in Wrightstown and Upper Makefield.

Being **Current** means that the Jointure will update its ordinances, policies, and supplemental plans on a regular basis, to fulfill the promise of this Comprehensive Plan and to respond to changing conditions.

CAPTURE THE FUTURE

CAPTURE THE FUTURE

COMMUNITY GOALS

How will we live in the future? What kind of community do we want to leave for future generations? What should it look like and how do we make it happen? These are the questions facing the Newtown area municipalities as it envisions the future. The townships of Newtown, Upper Makefield, and Wrightstown – the Jointure – are continuing their 25-year cooperative approach to planning for the future by working together to prepare this Comprehensive Plan.

The joint goal is to create good communities for residents and to leave a legacy for future residents.

Nine principles will be used to guide the actions and decisions of the townships of the Jointure so that community changes will protect the natural environment, respect existing neighborhoods, protect the agricultural economy, reflect the goals of the residents, and establish living and working environments that provide services and facilities needed for healthy neighborhoods.

The Principles were developed by reviewing the results of the resident questionnaire, examining current conditions and trends, learning from the experiences of other communities, and setting objectives for what our community should be in the future.

GUIDING PRINCIPLES

Principle 1 Promote Smart Growth

Guide new growth into development areas and guide the form of new development to create good places to live that are respectful of neighbors and to the community and that adhere to the principles of the Jointure. Accommodate anticipated growth in defined development areas in all three Jointure townships to meet the area's obligations to provide for new residents in a variety of housing choices.

Principle 2 Promote Sustainable Development and Protect Natural Resources

Development will be accommodated in a way that protects the land, area, and water for present and future generations. Policies to protect the landscape, vegetation, natural topography, farmland resources, wetlands, and floodplains that have been part of the Jointure standards for three decades will be continued. Updates to these policies to address flooding problems, site disturbance, water quality degradation, loss of tree cover, and energy conservation are recommended, in accordance with the mandates of the Pennsylvania Municipalities Planning Code.

Principle 3 Provide for Mobility and Connections

Foster a safe, efficient, and comprehensive transportation system, of roads, rails, buses, transit, trails, bikeways, and sidewalks, that provides a variety of options for traveling in and through the Newtown area.

GOALS AND GUIDING PRINCIPLES

Principle 4 Preserve Open Space and Protect Agriculture

Farming and related uses remain important parts of the landscape of the Jointure, but the pressure from development threatens to fragment these resources and counters the efforts to preserve them. Agricultural and horticultural practices continue to expand, and related activities, such as pick-your-own produce and farmers' markets, help support the area's farming community and provide local food sources.

The Plan supports and encourages the continuation of farming within the Jointure, in accordance with the requirements of the Pennsylvania Municipalities Planning Code and Act 38 (ACRE).

The Plan supports protecting meaningful open space as part of the development process and through conservation easements.

Principle 5 Build and Maintain Livable Communities

Adequate community services and facilities such as police protection and schools and area for community institutions are important community assets. Community services and facilities are often what attract new residents to places like the Jointure. The residents responding to the community questionnaire said that the school system and the facilities that are available to families were important factors in deciding to live here. Some community facilities and services are provided by the municipalities. Other services are provided by private contractors, by non-profit organizations, or by other levels of government.

Principle 6 Provide Parks and Recreation

Foster the development of active and passive recreation to promote the physical and mental well being of residents of all ages. Parks, recreation facilities, and open space are important improvements and are vital aspects of sound communities.

Principle 7 Sustain and Support our Commercial and Jobs Base

Maintain the area's convenient and attractive commercial areas for the purchase of necessary goods and services, but prevent the over-commercialization of the area. Maintain and enhance the area's economic vitality, businesses and industries that provide jobs, convenient shopping and services, and quality of community life. Good land use planning can direct nonresidential development to areas where it makes sense.

Principle 8 Protect Historic Resources

Ensure the preservation of the area's historic resources by regulating future growth to recognize, protect and incorporate landscapes, buildings and other structures of historic, architectural and cultural significance, as required by the Pennsylvania Municipalities Planning Code.

Principle 9 Preserve our Villages

Protect the scale and character of the villages through land use and design controls so that the historical and cultural heritage of these villages in the Jointure can enhance the quality of life in the present and be preserved for future generations.

GOALS AND GUIDING PRINCIPLES

Principle 1 PROMOTE SMART GROWTH

"Guide new growth into development districts and guide the form of new development to create good places to live that are respectful of neighbors and to the community and that adhere to the principles of the Jointure. Accommodate anticipated growth in defined development districts in all three Jointure townships to meet the area's obligations to provide for new residents in a variety of housing choices."

In the resident survey conducted as part of the comprehensive planning process, **proper growth management was identified as the most important problem facing the Jointure** when planning for its future. This section provides a community vision for future growth and development in the Jointure that attempts to address this concern; it serves as a collective statement by the Jointure communities concerning how they wish to accommodate and direct future development. Specific planning tools are discussed that promote the concentration of future development within appropriate areas of the community while enhancing the preservation of its valuable natural, agricultural, open space and historic resources.

Three major influences have played important roles in shaping the Jointure's future land use plan: the development district concept, the provisions of the Municipalities Planning Code regarding intergovernmental cooperative planning, and past planning in the Jointure as presented in previous plans and updates.



POPULATION AND HOUSING CHARACTERISTICS

The municipalities that are part of the Jointure experienced population and housing growth during the 20th century, with most of the growth occurring during the past 25 years.

The **total population** in the three municipalities increased from 2,379 in 1930 to 11,311 in 1980. In the years since 1980, the population has jumped to 30,575. Estimates for 2006 show Newtown's population at 19,112, Upper Makefield at 8,484, and Wrightstown at 2,767.

Between 1990 and 2000, the **Jointure grew by 28 percent**, compared with 10.4 percent for Bucks County as a whole. Newtown Township had the highest growth rate (33 percent) with Upper Makefield at 21 percent and Wrightstown at 17 percent. This growth pattern is consist with the goals and objectives of prior Jointure planning programs, which designated Newtown as the future growth area with other land uses designated for Wrightstown and Upper Makefield.

The **age profile** of residents has changed, with a generally older population in all three communities. The decline in the population between 25 and 34 years that occurred in the Jointure parallels what has happened in the rest of Bucks County. The increase in residents over 45 and in the older age groups indicates that the population is getting older, without an influx of younger people.

The population is generally **homogeneous**. The Jointure had a nonwhite population of 5.3 percent in 2000, and an Hispanic Latino population of 1.2 percent in 2000. Over 90 percent of Jointure residents were born in the United States and live in a dwelling where English is the only language spoken.

Residents of the Jointure have a high level of **educational achievement**, with 90 percent having a high school diploma and as many as 61 percent with at least a Bachelor's degree. Of the Jointure municipalities, Upper Makefield has the highest educational achievement, as well as the highest in Bucks County, where 61 percent are college graduates. Newtown has 55 percent college graduates, and Wrightstown has 42 percent.

Per capita, family, and household **income** in the Jointure municipalities were higher than Bucks County as a whole, with Upper Makefield having the highest in the County. Median family income for Bucks County was about \$68,000, compared with \$92,000 in Newtown and Wrightstown and \$114,000 in Upper Makefield.

Household size has declined slightly in the Jointure, consistent with county and national trends toward smaller families and more people living alone.

The total **number of housing units** in the Jointure grew from 8,216 in 1990 to 10,432 in 2000, an increase of about 27 percent. **Homeownership rates** were above the County average in the Jointure, where between 87 and 93 percent of households own their homes.

The new development that has occurred in the past 30 years results in a **housing stock that is relatively new**. In Newtown Township, 92 percent of the housing units have been built since 1970. This is significantly higher than Upper Makefield, where 66 percent were built since 1970 or Wrightstown where the number is 40 percent.

Projections for future population and housing growth are prepared by the Delaware Valley Regional Planning Commission. The three Jointure townships are projected to grow to 35,180 by the year 2015, or an increase of 6,955 persons over the 2000 population of 28,225. Using prevailing household sizes, this translates into a projected housing increase of 2,600 housing units between 2000 (for which we have accurate Census information) and 2015.

This **projected increase of 2,600 units** has already been partially met by new housing planned or constructed between 2000 and 2006. The Comprehensive Plan accounts for the units planned and for the additional units needed. The Plan also sets a policy to re-examine future needs after the 2010 Census data become available so that these numbers can be benchmarks for continued planning.

LAND USE CHARACTERISTICS

The Jointure municipalities are expected to grow in the next 15 years. The goal of the comprehensive plan is to guide development to avoid sprawl and continue to maintain a land use pattern that focuses development in logical growth areas and that preserves natural and agricultural areas. There have been notable shifts in the land use characteristics of the individual townships of the Jointure as well as in the characteristics of the Jointure, as measured against comparable statistics from 1990. Efforts to preserve more areas for recreational use and open space have increased the amount of land dedicated to those purposes. Land uses that may be associated with increased development

(transportation facilities, utilities, governmental facilities, institutional uses and commercial activities) showed a slight increase in the amount of land devoted to them. While parts of the Jointure were not directly touched by growth, land use changes indicate that development continued to impact the Jointure as a whole. Map 1, Existing Land Use, shows the land use patterns in the Jointure.

Loss of Farmland and Undeveloped Land—The Jointure continued to lose land classified as agricultural in the period 1990 to 2005, and losses in this category constituted the greatest change in percentage (9 percent decrease) and in number of acres (2,931 acre decrease). Agricultural uses in Newtown Township declined from 21 percent of its total area to 9 percent (899 acres lost), while Upper Makefield had the largest loss of acreage at 1,537 acres (a decline from 37 percent to 26 percent). Wrightstown lost 494 acres of land classified as agricultural (a decline from 29 to 21 percent) in this period. In some cases, the loss of farmland is offset by open space set aside in cluster developments as viable farmland.

Land not actively farmed, but undeveloped, was also converted during this period of time. There were approximately 3,900 undeveloped acres in the Jointure in 1990, declining to 2,297 acres in 2005. The decline was greatest in Newtown Township where nearly 700 acres of vacant land was converted to developed land. Wrightstown and Upper Makefield both dropped to 10 percent of the total land area in those communities.

Increase in Residential Development—Land used for single-family residential dwellings in the Jointure increased the most, both in percentage (7 percent) and in number of acres (1,808 acres) dedicated to that use. In Newtown and Upper Makefield the percentage of land in the single-family residential category increased from 15 percent to 21 and 22 percent, respectively. Wrightstown experienced an increase from 13 to 18 percent in this time frame.

The percentage of land in rural residential use increased modestly, from 21 to 22 percent of the total area of the community. These are residences on lots of five acres or more. Rural residential areas in Upper Makefield increased by 3 percent (427 acres) with a 2 percent drop in Newtown and virtually no change in Wrightstown. The steadiness of this percentage may not be a result of stagnating growth, but instead may indicate the breakup of farms into the rural residences. In particular this may be the case in Upper Makefield, which saw large declines in agricultural land and increases in rural residential land.

Between 1990 and 2005 the amount of land devoted to multifamily housing in each township increased. Multifamily housing is any type of attached units, including townhouses and apartments.

Increases in Open Space—Parks, recreation and open space increased by 1,371 acres (from 8 to 13 percent of the total) throughout the Jointure from 1990 to 2005. Newtown added 561 acres, Upper Makefield added 683 acres and Wrightstown added 127 acres in this category. The additions to open space continue as municipalities move aggressively to protect farmland, parkland, and natural areas. About 13 percent of the land area in the Jointure was devoted to parks and open space, accounting for more than 3,600 acres, in 2005.

Since 2005, further additions to open space have swelled this total. By expanding the category to include all lands that have been protected from future development, such as land owned by

homeowners' associations, under private deed restrictions or open space set aside as part of developments, the total protected land is much greater. In Upper Makefield Township alone, the land set aside and not developable totals approximately 5,000 acres. Similarly preserved open space in Newtown Township and Wrightstown Township greatly expands the amount of protected land.

Changes in Nonresidential Land Uses—The area of the Jointure devoted to quarries, government and institutional uses, and commercial uses each increased by one percent. Ouarries and commercial areas went up from one percent of the total to two percent. Increases in quarry land include property that was newly acquired but was not necessarily put into active production. The land area devoted to government and institutional uses grew from two to three percent of the total.

Manufacturing declined in the amount of land in this use, going from two percent to one percent of the total. While the land devoted to manufacturing decreased in all three townships, the decline was greatest in Newtown Township (161 acres). Conversion of manufacturing areas in the Newtown Industrial Commons (now Newtown Business Commons) to other uses, such as offices, played a role in this shift, which is consistent with the national shifts in the economy.

Newtown Township's office research district, located along Route 332 near I-95, has been developed with several large office, research, and educational uses and contains several parcels that could be used for future office development.

The areas along Sycamore Street have been zoned for cohesive commercial development and provide a good tie-in to Newtown Borough's State Street district. Newtown Township provides central shopping at two shopping centers.

Upper Makefield has adopted strong recommendations to support the Washington Crossing area, where a fortuitous mix of commercial activities and nationally known historic sites make this a gateway to the community. Physical streetscape improvements under construction in 2008 will enhance this area.

In Wrightstown, the Penn's Park area and the Anchor area are small-scale enclaves of nonresidential activities, with some modifications and new development in the past decade.

Quarrying is located solely in Wrightstown Township.

The land use trends can be summarized:

- Population growth and development in all municipalities.
- Increased attention to preservation of open space to preserve recreation land, farmland, and natural areas, with successful implementation of municipal and county open space plans.
- o Increased attention to historic resources, such as Washington Crossing and the historic buildings.
- Shift toward office employment and away from traditional manufacturing and industry.
- Continuation of commitment to providing good community facilities and services by the townships and school districts.

PLANNING FOR FUTURE NEEDS: LAND USE RECOMMENDATIONS

The Jointure townships have examined the current development pattern and have estimated, using DVRPC projections, the future development expected in the Jointure area. The number of units constructed between 2000 and 2006 was deducted from the projected housing need for 2000-2015. This calculation results in an estimated future housing need in the residential development area of the Jointure townships of 1,067 units between 2006 and 2015.

The comprehensive planning policy of the Jointure has been to accommodate needed growth in areas close to transportation corridors, convenient to community facilities, and away from environmentally sensitive natural features and valued open space. While in the early planning years of the Jointure, this meant focusing development in Newtown Township, that pattern changed in the 1990s as more land was developed in Upper Makefield and Wrightstown.

The basic planning principle adopted years ago by the Jointure continues to be consistent with good planning policy and best practices across the country.

The Jointure townships continue to embrace the development district concept of channeling development into logical areas, but with an important departure for the 2008 plan. This plan includes all residential zoning districts except for the Conservation Management (CM) and Jericho Mountain (JM) districts as part of the residential development district. This means that areas within all three townships are part of the development district. Land within the CM and JM districts is still available and used for residential growth and is considered when estimating future land availability for growth; not being designated as part of the "development district" in a comprehensive plan does not take away the ability to develop land in accordance with the zoning ordinance. Even though the CM district was not part of the development district, development has occurred in the Conservation Management zoning district, and in the past five years, as much as 65 percent of development occurred outside the defined development district.

The land currently zoned and available in the Jointure's residential zoning districts is more than adequate to accommodate future development between now and 2015, even assuming that only a portion of the CM and JM districts is used for development.

The Comprehensive Plan also looks at the potential for **multifamily housing**. Using the County's average of percentage of housing units in multifamily arrangements as a benchmark, the Jointure compares favorably to the county as a whole. Taking into account the existing multifamily units and the land available and zoned for multifamily units, the Jointure has a surplus of multifamily units and potential for a larger surplus of multifamily units through the year 2015, if all land zoned were built.

Based on a careful assessment of what exists and on what projected needs are, there is no need to create new higher density zoning districts to accommodate either total expected growth or anticipated need for multifamily dwellings. The emphasis in the next planning period must be on accommodating development in development districts, minimizing sprawl by maintaining current densities and land use patterns, and continuing to protect valued open lands for farming, recreation, and environmental protection.

Development District Concept—The fundamental objective of this concept is to concentrate future development in areas best equipped to handle growth while minimizing land use conflicts and costs to residents. To accomplish this objective, the concept calls for concentration of growth into development districts designated by municipal officials for this purpose. While the development district concept allows municipal officials to plan for the timely expansion of development, infrastructure, and municipal services, it also enables them to preserve significant vacant, agricultural, and natural resource lands as open space.

Article XI of the Municipalities Planning Code—The state law governing planning and zoning allows multimunicipal comprehensive plans to designate growth areas where projected development can be accommodated, where commercial, industrial and institutional uses can be located, and where services for such development can be planned for or provided. The act states that plans may designate future growth areas, designate rural resource areas where rural resource uses are allowed, where the permitted density of development is compatible with rural resource uses, and indicate where infrastructure extensions and improvements will not be publicly financed unless the participating municipalities agree that such services are necessary or appropriate.

Prior Planning in the Jointure—The 1983 joint municipal comprehensive plan's provisions for higher density housing were based on the Development District Concept, and high density housing was directed to areas called Residential Development districts in that plan. The 1997 Update identified and described 11 categories of planning areas. This plan expands those areas to reflect actual development patterns and future needs.

Designated Growth Areas—These areas are intended to accommodate the bulk of future development and infrastructure expansion. They are designed and sized to contain projected future growth, including infill and adaptive reuse opportunities. Thus, development districts also include areas that have been previously developed. Map 2, Future Land Use, shows the proposed land use plan.

Rural Resource Areas—These areas include lands that require special resource protection. They contain critical natural resources including large expanses of woodlands, wetlands, hydric soils, and prime agricultural farmland. Rural resource uses are intended to predominate in these areas at appropriate densities with only limited publicly financed infrastructure to be provided.

Planning Areas in the Rural Resource Areas include the following:

- 1. Jericho Mountain Conservation Area
- 2. Conservation Management Areas

Planning Areas in the Designated Growth Areas include the following:

- 3. Low Density Residential Areas
- 4. Medium Density Residential Areas
- 5. High Density Residential Areas
- 6. Neighborhood Conservation Areas
- 7. Commercial Areas
- 8. Office and Research Areas

- 9. Industrial Areas
- 10. Quarry Areas
- 11. Public Purposes Planning Areas

Permitted uses, allowable densities and all other standards for each planning area are specified in the respective zoning districts contained with the Newtown Area Joint Municipal Zoning Ordinance.

Jericho Mountain Resource Protection Area—The fragile ecological characteristics of this planning area and its numerous critical resources, combined with its unique scenic and historical value, require that this area be protected. The limited groundwater resources of this area's Diabase geology are recognized as a significant constraint to development. These conditions have warranted the area's designation as a special zoning district with development standards which will help ensure the preservation of its ecology. Protection is also provided through the environmental performance standards of the zoning ordinance. As environmental science improves our understanding of nature and provides improved techniques for its protection, the Jointure should continue to monitor conditions in this area and add protection measures as necessary.

Non-residential uses permitted as conditional uses in these areas include recreational facilities, child care facilities and schools. The Jointure should re-examine these uses. Schools, which require intensive land use and generate increased traffic, may not be suitable in this resource-laden part of the Jointure.

Conservation Management Areas—This area, much of which is at a distance from development districts, generally lacks sufficient highway capacity and adequate municipal facilities to support intensive development. It also includes a variety of important natural resources, including aquifer recharge areas. This area shall be reserved for low-intensity uses in order to encourage the continuation of farming, to provide for groundwater recharge and to provide a balance in land uses throughout the Jointure between these areas and the more extensively developed portions of the community located near the Borough of Newtown and in the other development districts of the three townships.

Twenty-nine percent of residential development in Upper Makefield, 42 percent of residential development in Wrightstown Township and 65 percent of such development in Newtown Township occurred outside of the residential development district between 2000 and 2005. Much of that residential development occurred in conservation management areas. The Jointure should review its existing zoning regulations to guide intense development away from conservation management areas.

Efforts to channel growth away from conservation management areas included a recent examination of the residential development options permitted in the CM Zoning District, which govern this area. This resulted in modifications to the permitted uses to ensure parity among development options in terms of density in the CM District. Any future changes in use regulations should be coordinated with sewage facilities planning to provide water recharge opportunities.

Non-residential uses such as schools and childcare facilities may not be appropriate for conservation management area and their removal from the list of conditional uses should be considered.

The Jointure should explore additional mechanisms for preserving agricultural resources and promoting the continuing viability of farming in this area. Certain communities with agricultural preservation zoning not only require that a percentage of farm soils be preserved (as is currently required in the Jointure), but also mandate specific subdivision options for parcels where a certain amount of such soils are found. Along with allowing the subdivision of a large agricultural lot into smaller farms, these options include the subdivision of a site into large estate lots, smaller residential lots or non-residential lots provided that a farmland preservation tract is also provided. Agricultural soils intended for preservation must be located on that tract whose size, dimensions and access to roadways (as regulated in the ordinance) make it an attractive parcel to farm. The zoning ordinance could also be revised to permit and regulate suitable accessory uses to agriculture that enhance its viability and presence as an important characteristic of the Newtown Area.

Low Density Residential Areas—A range of low-density residential uses shall be accommodated in this planning area in the more rural portions of the region adjacent to several of the Jointure's villages. It is intended to maintain the existing low density neighborhoods while providing the opportunity for future development, at similar intensities, as part of the designated growth area. Allowable density varies depending upon the type of residential development and the amount of open space proposed.

Medium Density Residential Areas—A range of medium-density residential uses are permitted within the portions of the region designated as medium-density residential areas. Allowable density varies from 3.22 du/ac for performance subdivisions to 1.22 du/ac for single-family clusters in the R-1 Zoning District portion. Single-family detached dwellings are permitted on minimum lot sizes ranging from 30,000 square feet to 60,000 square feet. Decisions regarding what types of sewage disposal systems may be appropriate in this area, including alternative systems and community systems, will be based on the recommendations and requirements of the Sewage Facilities (Act 537) plans and any other studies or analyses carried out or required by the Jointure municipalities.

High Density Residential Area—High-density residential areas are designated in several parts of the Jointure. Several of these areas adjoin neighborhood or community commercial areas and have proximity to adequate highways, existing municipal infrastructure and other related services. They are located in Newtown Township surrounding the traditional regional center in Newtown Borough, and in Upper Makefield Township in the Taylorsville-Washington Crossing area. The Newtown Grant development is designated as a high density residential area, as is a portion of Upper Makefield on Creamery Road and several parts of Wrightstown Township on Swamp Road near Rushland.

Allowable density varies from 3.90 du/ac for mixed residential developments, mobile home parks and elderly housing to 1.85 du/ac for single-family clusters. Provisions for higher density housing have been adapted to incorporate village planning and traditional neighborhood design as forms of development. New development in these areas should be sensitive to the historic resources and should incorporate village planning guidelines.

Neighborhood Conservation Areas—Neighborhood conservation areas are concentrations of residential and mixed use development which were developed prior to the advent of municipal comprehensive planning and zoning, including the historic villages located in both Upper Makefield and Wrightstown townships. These planning areas provide for residential development consistent with present-day design standards, yet compatible with the existing neighborhood character. Where

appropriate, mixed-use development, which preserves the form and function of village areas and contributes to the preservation of historic structures, is permitted.

Commercial Areas—Commercial areas in the Jointure are located in Newtown Township in the vicinity of Newtown Borough, near the Taylorsville/Washington Crossing area in Upper Makefield and in the vicinity of Anchor and Penn's Park in Wrightstown Township. The various commercial areas permit development consistent with the function (i.e. neighborhood or community commercial areas) for which they are intended and in a manner consistent with the land use policies of this plan. Commercial areas are not intended to function as regional commercial centers featuring sprawl or strip-mall forms of development, but as sub-regional community commercial areas where development is concentrated in town-center fashion to serve local customers and residents, much like the existing shopping centers in Newtown Township.

Office and Research Areas—The large lot area requirements associated with corporate headquarters, administrative offices and research facilities are provided for within this planning area of Newtown Township near the 1-95 Interchange. Interim low intensity uses, such as various agricultural activities, are also permitted in this area by the zoning ordinance. Residential uses permitted by the zoning ordinance may also be appropriate in the portion of these areas north of the Newtown Bypass; such uses should generally not be permitted in the office and research areas south of the Bypass. Other, smaller office and research districts in Anchor in Wrightstown Township provide areas to accommodate office and professional uses intended to meet the needs of the region's residents and businesses.

Industrial Areas—Since the enactment of the 1983 joint municipal comprehensive plan, the portion of the Jointure judged most suitable for industrial and related development has been located in the Newtown Business Commons. A wide range of industrial-related uses are provided for within this planning area due to proximity to supporting services and facilities.

Industrial areas have also been designated in Wrightstown Township to accommodate comparable forms of industrial development. It is envisioned that any needed services and facility improvements required for industrial uses will be provided by the developers of those sites. Sewage facilities in these areas must be consistent with Wrightstown Township's official sewage facilities plan and any other studies conducted by the township or the Jointure.

Quarry Areas—Areas are delineated for quarry activity in Wrightstown recognizing existing uses. Appropriate safety and setback requirements are intended to ensure these intensive uses are compatible with the residential and agricultural uses permitted in surrounding areas. Upon termination of quarry activities within each area, reclamation shall be undertaken and completed in a timely and appropriate manner in accordance with the Pennsylvania Surface Mining and Reclamation Act.

Public Purpose Areas—These areas accommodate the significant uses of land devoted to public and institutional purpose. These include the parks and open space areas owned and managed by the Commonwealth of Pennsylvania, the County of Bucks and the municipalities of the Jointure. Various educational facilities, including the Bucks County Community College, the schools of the Council Rock School District and St. Andrew's Elementary School, are incorporated into these planning areas. Various facilities and properties of the participating municipalities are also included.

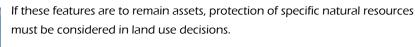
STRATEGIES AND ACTIONS

- 1. Promote a land use pattern which recognizes and preserves the agricultural, historic, cultural, and natural features which make the area unique by following the land use plan guidelines described.
- 2. Provide areas sufficient to accommodate the anticipated growth for a variety of housing types and densities for the 2005 to 2015 period by maintaining current land use regulations.
- 3. Conduct a review of the comprehensive plan after the 2010 Census data become available to ensure that data, policies and recommended actions continue to reflect conditions in the Jointure and to advance the community vision of its residents.
- 4. Direct residential and nonresidential development into Development districts in all three jointure townships where supportive services and facilities exist or can be economically and efficiently provided to prevent sprawl and inefficient development patterns.
- 5. Maintain the boundaries of the existing zoning districts of the Newtown Area Joint Municipal Zoning Ordinance.
- 6. Evaluate all zoning change requests in light of the Comprehensive Plan policies so that changes are consistent with the Plan.
- 7. Continue and advance efforts to permanently preserve open space and farmland.
- 8. Continue and support the joint municipal planning and zoning program.

PRINCIPLE 2 PROMOTE SUSTAINABLE DEVELOPMENT AND PROTECT NATURAL RESOURCES

"Many of the Newtown area's land use policies are consistent with 21st Century approaches to ensuring that communities are sustainable and environmentally responsible, as encouraged by the Pennsylvania Municipalities Planning Code."

The natural features of the landscape contribute to the quality of life in the Newtown Area. Farmland, woodlands, steep slopes, stream valleys, and gently rolling open spaces are some of the resources that are both visually attractive and have important functions in the ecology of the region.





Pennsylvania law, through its Constitution, the planning code, and case law, has made it clear that protecting the natural environment is a necessary and legitimate purpose of planning. Planning for "sustainable development" means taking into account:

- ~ Equitable sharing of resources among current and future generations;
- ~ Protecting and living within the natural carrying capacity of the land;
- ~ Minimizing natural resource use; and
- ~ Satisfying basic human needs.

CRITICAL NATURAL RESOURCES TO BE PROTECTED

The Plan establishes goals and strategies to establish and maintain a sustainable community.

FLOODPLAINS AND FLOODPLAIN SOILS

Floodplains are flat or low-lying areas adjacent to surface waters where flooding has occurred in the past and will likely occur in the future. During periods of heavy rains and high stream flow, floodplains provide temporary storage for floodwaters, reducing flooding threats to adjacent areas and providing a slower, more consistent flow of water. Floodplain soils or alluvial soils are eroded soils that were deposited along the banks of streams by flood waters. The natural vegetation supported by moist floodplains helps trap sediment from upland surface runoff, stabilizes stream banks for erosion control, and provides shelter for wildlife and proper stream conditions for aquatic life.

Floodplains and floodplain soils occur along the Neshaminy Creek on the southwest border of Wrightstown and Newtown townships, Mill Creek in Wrightstown Township, Newtown and Core creeks in Newtown Township, and the Delaware River, Jericho Creek, Houghs Creek, and tributaries to Pidcock Creek in Upper Makefield Township.

The Pennsylvania Floodplain Management Act (Act 166 of 1978) requires municipalities with floodprone areas to participate in the National Flood Insurance Program (NFIP) by adopting

ordinances that meet NFIP standards for regulating development in the floodplain. The Joint Municipal Zoning Ordinance prohibits any development, use, or activity which would cause any increase in the floodplain.

Floodplain ordinances do not preclude all development. Agricultural uses, private and public recreation uses and uses incidental to residential structures are permitted. Residential or nonresidential buildings may be constructed within the 100-year floodplain so long as they have the lowest floor elevated 1½ feet above the 100-year flood elevation. The structure must also be anchored to prevent collapse, flotation, and lateral movement. While keeping all building out the floodplains is a goal of the Jointure municipalities, this policy has not been supported by case law and legal challenges.

The 100-year flood is one which has a one percent chance of occurring in any single year, but a 100-year flood can and does occur much more frequently than every 100 years. See Map 3, Floodplains and Alluvial Soils.

Serious flooding along the Delaware River has affected Upper Makefield Township, and the township has been active in supporting measures that would reduce flood damages along the river through participation in the Bucks County Delaware River Flood Task Force. This group has advocated better management of upstream reservoirs, emergency management during flood events, and funding for projects that reduce flood damages.

WETLANDS

Wetlands are undrained, saturated soils that support wetland vegetation where the water table is at or near the surface or where shallow water covers the area due to permanent or seasonal inundation of surface or groundwater. Wetlands play a key role in maintaining and improving water quality by filtering out chemical and organic wastes. Wetlands store water during storms and floods, thereby reducing hazards to life and property. Wetlands provide groundwater recharge and habitat for many threatened or endangered plants and animals.

Wetlands are 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 Corps 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.

The Newtown Area Joint Municipal Zoning Ordinance largely prohibits the direct destruction of wetlands, but many development plans include road crossings of wetlands or create threats to wetlands from the secondary impacts of development. Grading and development near wetlands cause these resources to suffer the loss of hydrologic function and critical wildlife species. The destruction of adjacent vegetation and the construction of impervious surfaces increase the amount of stormwater runoff and decrease the natural capacity of the wetland to handle water volumes, runoff speed, and pollutants.

Changing the topography near the wetland affects the direction of stormwater runoff and can lead to either increased or decreased amounts of water reaching the wetland which affects the hydrologic functions of a wetland, threatening its existence. See Map 4, Wetlands and Watersheds.

LAKES AND PONDS

Lakes and ponds function in a similar manner to wetlands. Whether natural or manmade, ponds 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.

WATERCOURSES AND STREAMS

Watercourses and streams are important natural features, playing a role in stormwater management, erosion control and water quality. Riparian woodlands play a major role in maintaining the vitality of watercourses. They provide shade and organic matter to support aquatic organisms that are the base of the food web in many habitats. They help to stabilize stream banks, moderate flooding, and filter out pollutants from runoff. Such woodlands can also be an important component of the habitat of local animal populations.

STEEP SLOPES

Nearly all of the steeply sloping areas in the Jointure are located either along stream corridors, on Jericho Mountain, or along Taylorsville Road. The Delaware River, the Neshaminy Creek, and all other streams are defined by steep slopes along much of their length.

Development on steep slopes accelerates erosion by removing or disturbing the established groundcover and topsoil. Removal of the vegetation destroys the groundcover that absorbs rainwater, anchors soil, and buffers or dissipates the impact of rainfall on topsoil. Erosion produces sediment that pollutes surface water. Over time, accumulated sediments narrow stream channels and fill ponds. This process restricts the capacity of waterways to handle flood flows and increases the incidence and severity of flooding. See Map 5, Steep Slopes.

WOODLANDS

Where land was not suitable for cultivation because it was excessively wet, rocky, or steep, the forests were harvested from time to time, but not cleared. Today, most of the woodland areas are still located in areas that were not suitable for farming. The largest contiguous forest is Jericho Mountain. In other areas, forest cover extends in predominately linear patterns along fields, ridges, and stream beds.

Woodlands provide shelter for wildlife, play an important role in the oxygen, carbon, and nitrogen cycles, and reduce erosion and sedimentation in the area's streams. The vegetative cover softens the impact of falling rain, facilitates groundwater recharge, and reduces the volume and rate of runoff. Woodlands also play a role in filtering air pollutants and in moderating the impacts of greenhouse gases. Woodlands moderate environmental conditions, support wildlife, and provide recreational opportunities. Trees also provide an important scenic element in the landscape. See Map 6, Forest Cover.

PRIME AGRICULTURAL SOILS

The Natural Resources Conservation Service (NRCS) provides a classification system for the identification of prime agricultural soils. There are two major classifications as follows:

- *Prime Farmland* Land best suited for producing food, feed, forage, and oilseed crops. The soil quality, growing season, and moisture supply present are able to sustain high yields for crops economically when managed with modern farming methods. There are limited types of soils that qualify as prime farmland, but they primarily consist of Capability Classes 1 and 2 soils.
- Additional Farmland of Statewide Importance Land that is of statewide importance for the production of food, feed, forage, and oilseed crops. In Bucks County, based upon the list of soils that qualify, the majority are soil Class 3.

The number of farms and the amount of acreage devoted to agriculture has been declining, but aggressive preservation programs have saved many important farms with good farming soils. The most productive lands primarily are located in those areas of Upper Makefield and Newtown townships that have been developed in earlier decades. It is the intent of this plan to preserve farmland soils and to conserve agricultural activity in those areas that are actively farmed and contain concentrations of prime agricultural soils. See Map 7, Agricultural Soils.

ENERGY CONSERVATION AND GREEN COMMUNITIES

Communities in Bucks County have been establishing policies to conserve energy, reduce greenhouse gases and carbon emissions, and manage development to create "greener" communities.

Many of the actions already in place or proposed by the Plan work toward establishing a green community. These include: the development area concept; accommodating non-vehicle forms of transportation; protection of tree cover; production of food locally; recycling; and smart transportation planning.

The Newtown Area Comprehensive Plan includes considerations of energy conservation in its plan elements, following the guidance of the Planning Code: "To promote energy conservation and the effective utilization of renewable energy sources, the comprehensive plan may include an energy conservation plan element which systematically analyzes the impact of each other component and element of the comprehensive plan on the present and future use of energy in the municipality, details specific measures contained in the other plan elements designed to reduce energy consumption and proposes other measures that the municipality may take to reduce energy consumption to promote the effective utilization of renewable energy sources."

Other steps that can be taken by the Jointure are authorized by the Municipalities Planning Code and include subdivision ordinance requirements to encourage energy efficiency and zoning ordinance standards to protect solar access. These will be pursued during the time frame of this plan.

NATURAL RESOURCE PROTECTION STANDARDS

The Joint Municipal Zoning Ordinance has established maximum, quantifiable encroachment standards based on the capacity of natural features to withstand the effects of clearing and grading. The intensity and location of buildings and site alterations are limited by these standards, which are intended to accommodate disruption with minimal impacts on the site and areas beyond its boundaries. The zoning ordinance also requires a site capacity calculation, a procedure for site evaluation that limits the overall impacts of site development.

SIGNIFICANT NATURAL AREAS

The Natural Areas Inventory of Bucks County, Pennsylvania (1999) was conducted by the Morris Arboretum of the University of Pennsylvania (Ann F. Rhoads and Timothy A. Block) for the Bucks County Commissioners and provides guidance for implementation of the natural areas protection component of the Bucks County Open Space Program.

There were 118 sites included in the County list, which was based on the presence of important plant and animal species and habitat. The following were identified as Priority 2, 3, and 4 sites in Wrightstown and Upper Makefield townships; no sites were identified in Newtown Township and no Priority 1 sites were found in the three townships.

In Wrightstown Township the Priority 2 site consists of the Forks of the Neshaminy.

In Upper Makefield Township Priority 3 sites include Bowman's Hill and Pidcock Creek, Delaware Canal State Park Ellisia Site, Jericho Mountain, Scudders Falls Islands, and Timber Knolls Wetlands. The Priority 4 site in Upper Makefield is Washington Crossing – the former Marazzo Tract now owned by the Pennsylvania Department of Conservation and Natural Resources. Of these sites, about 48 acres of the Timber Knolls wetlands have been preserved. Several other sites are located within the boundaries of state parks and preserves. The Jointure ordinances can require that priority sites be shown on future subdivision and land development plans to help protect and mitigate impacts on these important local resources.

The natural resources of Jericho Mountain were identified in a report called "Environmental Assessment of Jericho Mountain." The mountain's numerous critical resources with severe limitations to development, as well as its unique aesthetic and historic significance, have warranted its designation as a special zoning district with development standards which will help ensure the preservation of the area's fragile ecology. The Jericho Mountain district contains standards which limit impervious surfaces to 5 percent of the site, prohibit development on slopes of more than 15 percent, and mandate open spaces for single-family cluster subdivisions.

GROUNDWATER

The availability of future sources of groundwater may prove to be one of the most critical limiting factors in future growth. The Conservation Management Areas are reserved for low intensity uses in order to provide for groundwater recharge. Availability is determined by major aquifer formations which underlie the area. Each of these aquifers is characterized by unique geological characteristics that determine water yielding capabilities.

Two hydrologic studies have been conducted within the Jointure, one for Upper Makefield Township to assess the availability and quality of the groundwater within the Township and the second for a consortium of townships including Wrightstown Township. Areas of the Jointure rely on low-yield aquifers for the supply of water.

The Plan recommends that groundwater resources be considered holistically, from a water cycle perspective, which includes consideration of stormwater management, wastewater planning, water conservation, and land use planning to protect aquifers and to ensure high water quality. Impact studies and well depletion agreements should be required where new development affects groundwater resources.

Soils

There are four areas within the Jointure that have some distinctive soil characteristics.

- 1. Nearly level to gently sloping, well drained soils, such as Alton and Delaware, located along the Delaware River in Upper Makefield.
- 2. Nearly level to sloping, moderately well drained types of soil like Lansdale and Lawrenceville, which are generally located in the southern portion of Newtown Township, including all of Newtown Borough.
- 3. Nearly level to sloping, moderately deep and somewhat poorly drained soils, such as Abbotstown, Readington, and Reaville soils, extending in a wide band through the area covering northern Newtown Township and large areas of Upper Makefield and Wrightstown townships.
- 4. Moderately steep, poorly drained soils, such as Towhee, Neshaminy, and Mount Lucas, limited to the immediate vicinity of Jericho Mountain.

Each of these areas and their associated soil characteristics will affect a site's suitability for supporting both conventional septic systems and land application systems (e.g., spray irrigation).

Understanding the soils characteristics will help the jointure communities without centralized wastewater systems to plan for environmentally responsible on-site wastewater systems.

DEER AND GOOSE POPULATIONS

Many areas of Bucks County, including communities in the Jointure, experience problems stemming from the large numbers of deer and Canada geese which have found welcoming habitats in the suburbs. Deer overpopulation often causes overgrazing of natural vegetation and the destruction of cultivated plants. The destruction of young trees and understory plants can lead to forest degradation. Although deer have become less discriminating eaters, municipalities can develop policies and regulations that encourage the planting of vegetation that is less attractive to deer and that discourage purposeful feeding of the deer by residents.

A single goose can produce one to two pounds of droppings per day; whole flocks can have a detrimental effect on water quality, and the nutrients found in the droppings can foster algae blooms and excessive plant growth that choke the life of a lake or pond. Flocks also feed on farm crops and pasture areas, which can result in environmental damage and economic losses.

Discouraging feeding, encouraging the planting of shoreline vegetation that restricts access to the water bodies that the geese prefer, and allowing lakes and ponds to freeze over are among the techniques that can help discourage Canada geese from taking up year-round residence. All three Jointure municipalities have implemented deer population control programs, The Jointure should continue assessing and adopting policies and regulations that environmental science research suggests may reduce the size of these populations and lessen their impact on the region.

STRATEGIES AND ACTIONS

- 1. Recognize that the protection of natural resources has direct effects on the health, welfare and safety of the community.
- Provide for the protection of critical natural resources including watersheds, groundwater, floodplains, floodplain soils, wetlands, prime agricultural soils, steep slopes, woodlands and stream corridors, and protection from hazards due to areas of hazardous geologic and topographic features.
- 3. Recognize and protect open land, farms and farmland as valuable resources for current and future generations.
- 4. Protect sensitive natural resource areas to ensure adequate habitat for threatened or endangered plants and animals.
- 5. Ensure that the permitted intensity of development reflects the suitability of particular landscapes to accommodate disruption without affecting natural cycles within and beyond sites where development is proposed.
- 6. Enforce the natural resource and agricultural soils protection standards in the joint municipal zoning ordinance.
- 7. Amend the joint zoning ordinance to reflect floodplain soils found in the new Natural Resource Conservation Service soil classification scheme.
- 8. Revise zoning standards for wetland buffers and 8 to 15% slopes to adequately protect these resources.
- 9. Establish a policy of "no net loss of tree canopy" through tree protection, tree replacement, and forest renewal efforts.

- 10. Supplement existing woodlands protection requirements in the joint zoning ordinance by requiring additional tree planting in appropriate environmentally sensitive areas and a mix of native plants as the preferred planting scheme for required landscaping.
- 11. Revise municipal subdivision and land development ordinances to require that subdivision and land development plans show priority sites designated in the *Natural Areas Inventory of Bucks County, Pennsylvania*.
- 12. Use the provisions of the Municipalities Planning Code to require energy conservation in new development.
- 13. Require the use of Low Impact Development techniques (e.g. site analysis and resource conservation plans) that respect a site's natural topography and drainage system while minimizing grading and site disturbance.
- 14. Support recycling and reduction of solid waste.
- 15. Consider the use and protection of all water resources: groundwater, wastewater, and stormwater to ensure a safe and reliable water supply and good water quality in streams.
- 16. Water Resources Protection:
 - a. Insure an adequate supply of potable water to meet the needs of the region and to ensure adequate quantity and quality of municipal and private water systems.
 - b. Explore opportunities for all three townships to work together to encourage water conservation in the Jointure.
 - c. Review current zoning regulations to ensure that they adequately protect critical areas of groundwater recharge. The pattern and intensity of development should be carefully controlled in order to prevent the depletion of the groundwater resources.
 - d. Continue township-level requirements for hydrologic studies to ensure protection of water resources. Studies should continue to address the environmental effects of removing large quantities of groundwater (versus the use of surface water), a determination of the maximum rates of groundwater withdrawal (versus groundwater recharge), and an identification of critical recharge areas within the region.
 - e. Establish regulations for wellhead protection zones.

17. Wastewater

- a. Update the wastewater facility plans for the jointure municipalities and make sure that wastewater policies are consistent with land use policies.
- b. Require detailed wastewater facilities alternatives for proposed extensions of sewer service outside the delineated Development Area. Such analyses should include the

evaluation of community systems and the impact of providing sewer service on the available capacity intended for the Development Area.

- c. Consider the long-term impacts of community wastewater systems and their management.
- d. Adopt ordinances which address operation and maintenance requirements and design requirements of individual alternative systems (e.g., spray irrigation or stream discharge systems) supplemental to PADEP and BCDH regulations.

18. Stormwater

- a. Continue to enforce the recommendations of the Delaware River South and Neshaminy Creek stormwater management plans.
- b. Encourage retrofits of existing stormwater management facilities to meet current standards for volume control and water quality improvement.
- c. Ensure that maintenance programs for stormwater management facilities an are in place and meet National Pollution Elimination and Detection System (NPDES/MS4) requirements.
- Identify areas continuing to experience flooding problems and determine what remediation measures are feasible; participate with county, state, and federal efforts to reduce flooding damages.
- 20. Study deer and goose control issues and adopt any necessary related ordinance language as a way to protect the public against threats from diseases and other threats. Promote the ongoing education of resource protection programs and activities sponsored by various public and private organizations/agencies. Support and foster intermunicipal cooperation on deer control matters.
- 21. Efficient use of energy resources:
 - a. Direct residential and nonresidential development into Development Areas in all three jointure townships where supportive services and facilities exist or can be economically and efficiently provided to prevent sprawl and inefficient development patterns.
 - b. Continue and advance efforts to permanently preserve open space and farmland.
 - c. Continue to review the joint zoning ordinance to ensure it promotes compact mixeduse development that is conducive to pedestrian and bicycle travel and reduction in vehicle trips.
 - d. Encourage connecting neighborhoods; provide traffic safety measures to discourage speeding and cut-through traffic on neighborhood streets.

- e. Encourage the expansion of the public transportation and non-automotive options for travel within the Newtown Area.
- f. Preserve the Newtown Rail Line right-of-way and access to it for the future reactivation of public transportation service, to reduce the Newtown area's dependency on automobile use.
- g. Support the efforts of the Bucks County Foodshed Alliance and other similar organizations (e.g., public awareness initiatives, procurement of funding sources) and consider other mechanisms to create community-supported agricultural enterprise to help preserve farming operations, provide food and energy sources close to home.
- h. Consider amendments to township Subdivision and Land Development ordinances to incorporate provisions encouraging the use of renewable energy systems and energy conserving building design, as authorized by the Municipalities Planning Code.
- i. Consider amendments to the JMZO that are designed to promote access to incident solar energy, as authorized by the Municipalities Planning Code.

PRINCIPLE 3 PROVIDE FOR MOBILITY AND CONNECTIONS

"Foster a safe, efficient, and comprehensive transportation system that provides a variety of options for traveling in and through the Newtown area."

The transportation system provides access to homes and businesses and connections to places inside and out of the community. Rapid population growth and a strong economy have challenged the ability of the transportation system to serve locations efficiently. Funding levels for roads, the backbone of the transportation system, have not kept pace with the proliferation of motor vehicles, housing and businesses, or with the increase in trips per person. The backlog of needed road maintenance and construction projects has grown larger, even as residents of the Jointure townships express their concern that traffic is among the most significant problems in the area.

GOOD TRANSPORTATION PLANNING

Conflicts arise when mobility is impeded by congestion, but also when traffic moves too quickly through local streets, disrupting neighborhood safety and peacefulness. While the Jointure has made significant strides in encouraging efficient land use patterns, people tend to use their automobiles more frequently than in the past. While this is typical of most communities, an automobile-dominated transportation system may destroy more opportunities than it creates. This combined with minimal public transportation in the Newtown area creates safety problems and traffic congestion. Once seen as a symbol of freedom that gave the individual citizen command over time and space, the automobile is now increasingly seen as a major source of congestion and pollution.

The components of good transportation planning are discussed below. These concepts need to be considered when developing ordinances, when working with PennDOT, when reviewing plans and working with developers, and when planning municipal improvements.

ESTABLISHING THE TRANSPORTATION/ LAND USE CONNECTION

Land use patterns and intensity influence the roadway network. Likewise, the roadway network can influence the land uses in an area. Just as new or expanded transportation systems create new access opportunities that attract new development, new development patterns create new trips and a need for additional transportation facilities. Some land uses require access to larger roads, and the Joint Municipal Zoning Ordinance contains requirements for road access where the proposed use will generate large traffic volumes. These regulations will be continued and expanded where needed. See Map 8, Highway Classifications.

Overdevelopment coupled with inadequate transportation services and funding create congestion and traffic impacts on highways and local roads. They cause worsening air quality conditions, decreased highway safety, and reduced community access. Inefficient transportation access and unplanned land use patterns can be a significant hindrance to economic growth and productivity.

The traditional approach to meeting transportation demands – building more and bigger roads – is no longer an option. As quality of life values emerge and funding shrinks, communities can no longer rely on new road capacity to meet ever-increasing demands.

The Jointure townships must recognize that transportation improvements will not keep pace with trip increases and that the managing growth is the only way to ensure mobility. The Jointure townships must carefully consider the transportation implications of every land use decision, beginning with every request for a change of zoning or land use.

CONTEXT SENSITIVE SOLUTIONS

In the not-so-distant past, transportation engineers and designers ignored the questions and concerns of the community while designing new transportation systems, focusing solely on the fast and efficient flow of traffic. Realizing the mistakes of the past has led these professionals and PennDOT to develop a better way – *Context Sensitive Solutions*. Context sensitive solutions look beyond the pavement to the function streets and highways perform in enhancing communities and natural environments.

The approach looks at the need and purpose of transportation projects as well as addressing safety, mobility, and the preservation of scenic, aesthetic, historic, environmental, and other community values. 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. There are no boilerplate solutions. For each potential project, designers are faced with the task of balancing the need for the highway improvement with the need to safely integrate the design into the surrounding natural and human environments. As transportation improvements are being planned, the Jointure should identify important areas that warrant protection.

ACCESS MANAGEMENT

The Newtown Area has several arterial roadways designed for large volumes and high-speed traffic with access to abutting properties restricted. Controlling access to these roadways will allow them to perform their intended function. When access is not controlled, the number of conflict points with roadway traffic increases, placing serious demands on the roadway capacity and making conditions unsafe for vehicles entering or exiting the highway.

Access management is both a land use and traffic issue and includes such techniques as:

- o shared driveways
- o secondary roadways
- o driveway spacing
- o planted median strips
- o protected left turn lanes

Any experienced driver is familiar with the difficulties encountered on roads with many driveways to local businesses, compared with roads where access has been controlled and managed. Access

management measures should be included in the subdivision and land development ordinances and the plan review process.

TRAFFIC CALMING

Traffic calming measures are used to address speeding and high cut-through traffic volumes on neighborhood streets. 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. Physical types of traffic calming, such as speed humps, speed tables, chicanes, planted medians, roundabouts, and curb extensions, are self-policing; motorized vehicles will slow down in absence of a police presence.

Some of the goals of a traffic calming program are:

- 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;
- Safely accommodating emergency vehicles; and
- Reducing the need for enforcement on local roads.

Good context sensitive design will also take into account the design speed and physical conditions of new roadways. This will help control traffic speeds so that retrofits of streets to build traffic calming measures will become less necessary. Subdivision and land development ordinances should include street design standards that will limit speeds and provide for safer travel.

COMPLETE STREETS: PLANNING FOR PEDESTRIANS AND BICYCLISTS

Affording mobility to people on foot, on bikes, in wheelchairs, or in strollers is a goal of this comprehensive plan. Walking remains the least expensive 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.

Through the provisions of the local subdivision and land development ordinances, the Jointure is able to ensure that new developments, both residential and nonresidential, can be provided with walkways such as sidewalks or macadam multi-use paths. Ordinances should ensure that the entire right-of-way is routinely designed and operated to enable safe access for all users. The most feasible method of accommodating non-motorized travel would be to require multi-use paths along road frontages, as required in Newtown Township and as planned for in the Washington Crossing Gateway.

Recent improvements to Sycamore Street improve traffic flow and also provide for safe and effective pedestrian travel.

PUBLIC TRANSPORTATION

The Newtown Area is served by one bus route by the Southeast Pennsylvania Transportation Authority (SEPTA). Route 130 runs from Bucks County Community College and Newtown Grant in Newtown Township to Franklin Mills Mall in Philadelphia. The service connects the college, the Newtown Business Commons and other areas of the township to the SEPTA R3 Regional Rail Line (Langhorne Station) and to employment and commercial centers in the southern part of Bucks County.

The Newtown RUSH is a fixed-route public transportation service operated by the Bucks County Transportation Management Association. It began servicing job centers in greater Newtown on October 3, 2005. The Newtown RUSH is funded by the federal Job Access and Reverse Commute grant program, which provides funding to agencies for the implementation of transit services that provide a "last mile" connection between existing transit services (in this case, the SEPTA R-3 at Woodbourne Station in Middletown Township) and suburban jobs. The service operates only during peak commuting hours as determined by the prevalent shift times at employment centers. The route services several employment centers in the Newtown area, including the Newtown Business Commons, Lockheed Martin, Silver Lake Executive Campus, ICT Group, and the Luxembourg Executive Campus. The Jointure townships can actively promote and market the bus route as a feasible alternative to automobile use since the availability of public transportation is a benefit to all residents in the area.

The area was previously served by the Newtown Rail Line. The Newtown branch of the SEPTA R8 Regional Rail service was discontinued in the early 1980s. The use of outdated rolling stock, poor rail bed conditions, and diesel locomotion that was unable to use the center city tunnel led to a steady decline in ridership. Continual efforts to restore rail service along the line met with opposition, due to the costs and impact of electrifying of the line. Bucks County investigated the potential for the use of Bus Rapid Transit (BRT) for the area along the rail line in 2005. This would require right-of-way improvements as well as more intense development along the line to support it. The Jointure continues to favor the protection of the Newtown rail corridor for future public transportation services. Recent increases in rail ridership and the importance of public transportation to the region provide support for this position.

Another rail line which traverses the Newtown Area is the New Hope/Ivyland Railroad. The R2 Commuter Railroad owned and operated by SEPTA ends its service at the Warminster Train Station, just south of Ivyland Borough. However, the existing rail line continues to New Hope Borough passing through Wrightstown Township. At this time, the New Hope/Ivyland Railroad operates a tourist-based operation with scenic train rides.

TRANSPORTATION IMPROVEMENT PROGRAM

The Bucks County Transportation Improvement Program (BCTIP) is an inventory of transportationrelated improvements requested by municipalities, concerned citizens, transportation studies and other sources. This wish list is submitted to the Delaware Valley Regional Planning Commission (DVRPC) to be included as candidate projects for the regional TIP. The regional TIP is updated every two years, in coordination with PennDOT's Twelve Year Plan (TYP). The regional TIP lists all projects

that will use federal and/or state funds for their engineering, right- of-way costs, or construction costs.

Funding for projects is dependent upon federal allocations of transportation funding to our region. DVRPC, in conjunction with the member governments of the region, rank and select these projects submitted by the member governments. The TIP is approved by the DVRPC Board and then submitted to PennDOT to be included in the state TIP. The TIP can and does change monthly, as projects are added, deleted, or changed.

The current DVRPC TIP includes the following projects in the Newtown Area:

| MPMS# | Location | Description | Construction Year | |
|-----------------------------|-----------------------------|---------------------------------------|-------------------|--|
| Newtown Township | | | | |
| 57639 | Newtown-Yardley Rd | Penn Trail Intersection | post 2012 | |
| <u>Wrightstown Township</u> | | | | |
| 57625 | Route 232/Swamp Rd | Corridor and intersection improvement | s 2009-10 | |
| 64780 | Swamp Road | Corridor Improvement | post 2012 | |
| Upper Makefield Township | | | | |
| 71183 | Washington Crossing Gateway | Pedestrian/Bike improvements | 2008 | |

The Jointure municipalities have participated, along with other area municipalities, in the Bucks County Regional Traffic Study group, organized by our state legislators to identify traffic issues and to work toward regional solutions. A report has been issued, and the municipalities will determine what steps to take to agree upon action steps and implementation, including recommending additions to the TIP.

TRANSPORTATION ENHANCEMENTS PROGRAM

The Transportation Enhancements Program, sponsored by PennDOT and managed through the Delaware Valley Regional Planning Commission (DVRPC), is designed to fund non-traditional transportation projects and to improve community character through transportation-related improvements. Upper Makefield Township received a grant through this program to fund ADA ramps, sidewalks, crosswalks and streetscape improvements to link several detached state-owned recreation and historic sites in Washington Crossing Gateway.

TRANSPORTATION IMPACT FEES

Transportation impact fees are charges imposed on new development to help pay for off-site impacts and costs of development. Impact fees are based on projections of municipal costs that are related to the impacts of a particular development. A 1990 amendment to the Municipalities Planning Code (MPC) Act 209 added Article V-A, which allows a municipality to impose transportation impact fees for certain limited off-site, transportation-related improvements. The amendment authorizes the imposition of traffic impact fees to recover the cost of off-site road improvements necessitated by and attributable and directly related to new development.

A land use assumptions report involves the review of existing and projected development, types of land uses, densities, and population growth. A roadway sufficiency analysis involves establishing

existing and preferred levels of service for intersections within the study area. Needed transportation improvements will be attributed to new development, pass-through trips, or existing development and will be identified in the capital improvements plan. A preliminary implementation schedule and budget for the recommended infrastructure improvements is developed as part of the capital improvements plan. Newtown Township assesses traffic impact fees under Act 209.

STRATEGIES AND ACTIONS

- 1. Make the land use transportation planning connection by considering the transportation effects of planning decisions.
- 2. Promote improvements that eliminate or avoid hazardous transportation conditions for motorists, bicyclists and pedestrians and that are designed with consideration given to scenic, aesthetic, historic, environmental, and other community values.
- 3. Encourage pedestrian/multi-use path facilities for all new developments.
- 4. Identify needed improvements to the road system and coordinate efforts with PennDOT to address improvements in a manner appropriate to the area (context-sensitive designs).
- 5. Review and revise the joint zoning ordinance to ensure it promotes compact mixed-use development that is conducive to pedestrian and bicycle travel and reduction in vehicle trips.
- 6. Connect neighborhoods; provide traffic calming designs and street standards to discourage speeding and cut-through traffic on neighborhood streets.
- 7. Encourage the expansion of the public transportation and non-automotive options for travel within the Newtown Area.
- 8. Preserve the Newtown Rail Line right-of-way for the future reactivation of public transportation service, to reduce the Newtown area's dependency on automobile use.
- 9. Support efforts by the Bucks County TMA to determine the feasibility of extending commuter rail service from Warminster along the New Hope and Ivyland railroad.
- 10. Make sure developers pay their share for traffic improvements to compensate for the impact of their development
- Continue to work together on traffic solutions. Continue to discuss the Bucks County Regional Traffic Study and work together to implement improvements that all municipalities agree to.

"Farming and related uses remain important parts of the landscape of the Jointure, but the pressure from development threatens to fragment these resources and counters the efforts to preserve them. Agricultural and horticultural practices continue to expand, and related activities, such as pick-your-own produce and farmers' markets, help support the area's farming community and provide local food sources."

The Plan supports and encourages the continuation of farming within the Jointure, in accordance with the requirements of the Pennsylvania Municipalities Planning Code and Act 38 (ACRE).

The municipalities have successfully preserved thousands of acres of land for farming and open space purposes. The Plan supports continuing the protection of meaningful open space as part of the development process and through purchase of conservation easements.

When the jointure formed in the 1970s, no jointure members could have predicted the overwhelming public and governmental support for preserving farmland. In the past 20 years, the momentum has grown and millions of dollars have been spent to ensure that farming remains a strong sector in our local economy and a visible part of our landscape.

While development has taken some farms, agricultural and horticultural practices continue to expand, including the raising of higher-valued nursery stock, bedding plants, vineyards, and ornamental crops. Related activities, such as pick-your-own produce, farmers' markets, and accessory farm businesses continue to increase and provide local food sources.

Farms have been preserved in perpetuity through the Bucks County Agricultural Land Preservation program and through the land preservation programs in place in the three municipalities. Seven Upper Makefield farms, 3 Wrightstown farms and 1 farm that lies in both communities, are enrolled in the County preservation program. These farms have a total land area of 1050 acres.

Upper Makefield Township includes in its open space calculations everything that cannot be further developed, whether it is open space in a development, agricultural easements, open space easements, parkland or outright ownership by the township or a conservancy. They also include lands owned by the school district. Using this definition, about 5,000 acres of land in Upper Makefield cannot be developed in the future.

Wrightstown owns the 101-acre Anchor Run Farm, which operates as Community-Supported Agriculture, as well as the Wicen, Chippewa, and Smith Farms. These farms, combined with others preserved by the county, the township, and conservancies, represent most of the farming acreage in Wrightstown.

Newtown Township has several farms and still committed to preserving agricultural lands from development and encouraging active farming. The Township also seeks to continue to preserve open space for passive and active recreation.

The joint zoning ordinance contains provisions that require open space preservation and protect of agricultural soils as part of new development. Protection of farm soils, which is a permitted purpose of zoning under Pennsylvania law, is one step that municipalities can take to preserve a valuable resource. The policies of continuing to preserve open space and farmland are strong recommendations for the Vision 2020 Plan. The jointure plans to continue to work with all levels of government and to support local farming so that it will remain a major component of our local economy and contribute to our food supply.

County Agricultural Easement Program

In May 1989, the Bucks County Commissioners appointed a nine-member board to develop and oversee a county farmland preservation program. The Bucks County Agricultural Land Preservation Program (BCALPP) seeks to acquire agricultural conservation easements on viable farmland within the county.

An agricultural conservation easement can be secured from a willing landowner and is a legally binding document filed in the land records for the deed of a farm property, restricting its use to agricultural and directly associated uses. Restrictions are binding upon the owners and future owners, carrying with the land. A conservation easement allows a landowner to protect his farmland for agricultural uses while retaining private ownership.

The BCALPP compensates farmers for the difference between the fair market value (development value) and the agricultural value of their land. To be eligible for this program, the strict criteria must be satisfied, including farm size, soils types, enrollment in the agricultural security district, and other measures of farm viability. Landowners apply to become eligible for the preservation program.

Several farmers in the Jointure have participated in the program. Farms preserved in Upper Makefield Township consist of the two Gunser properties (93.1 and 131.7 acres), the Siegel property (90.9 acres), the Thorpe property (133.5 acres), the Schleyer property (70.3 acres), the Rapuano Estate (172.8 acres), and the Slack farm (100 acres). The program preserved the Trivellini property (48.1 acres), Webb property (23 acres) and the Stott-Cohen property (127 acres) in Wrightstown Township.

Lands with Preferential Assessment

Numerous residents within the township have registered their properties with the county under the Pennsylvania Farmland & Forest Land Assessment Act of 1974 (Act 319). Bucks County has entered into voluntary covenants with owners who have valuable open space resources in order to encourage retention of open space by granting a lowered assessment. Under this program the property, except for the portion considered part of the home site, is assessed by the county at the fair market value (or at less than its highest and best use). As a result, the property owner is afforded a significant savings through a preferential property tax assessment as an incentive to maintain the land as farmland or forest land. Act 319, also known as the "Clean and Green Act," is available to landowners for the following uses: agricultural use, agricultural preserve, and forest preserve. Enrollment in this program is continuous unless dissolved by the landowner or eligibility requirements are not met.

Lands covenanted under Act 319 are not permanently protected because the property owners can terminate the agreement at any time. Commitment to Act 319 is an example of a local grassroots action that should be considered in the overall open space planning process. In total, there are about 4,894 acres of land covenanted under Act 319 within the Jointure (854 in Newtown Township, 2,947 in Upper Makefield Township, and 1,093 in Wrightstown Township).

Agricultural Security Areas

Enrollment into an Agricultural Security Area (ASA) suggests a voluntary commitment by property owners for ongoing farmland preservation. The ASA program was created by the Agricultural Security Area Law (Act 43 of 1981) to protect the agricultural industry from increasing development pressure. ASAs are intended to promote permanent and viable farming operations by strengthening the farmer's sense of security in his right to farm.

For properties to be eligible for enrollment into an ASA, the aggregate total of the properties must be a minimum of 250 acres of viable farmland, and the zoning district in which these properties are located must permit agricultural uses. Individual parcels comprising a designated ASA must be at least 10 acres in area of which at least 50 percent contains Class 1–4 soils. Respective property owners must petition the township supervisors in order to gain approval into the program. Consequently, once enrolled into an ASA, farmers gain the following benefits:

- Protection from municipal nuisance ordinances which restrict odors and noise in a community;
- Protection from governmental acquisitions of land through condemnation or eminent domain; lands proposed for such action within a ASA must first be approved by Agricultural Lands Condemnation Approval Board;
- To be eligible for the county's agricultural land preservation program, a farm must be enrolled in an Agricultural Security Area.

The voluntary participation of landowners in Act 319 and in Agricultural Security Areas is important to consider in future farmland preservation planning.

The preservation of farmland is only one component of open space preservation in the three communities, which includes parkland, recreation areas, and natural areas or resource-protected areas. But farmland is important for the role it plays in providing local food sources for residents and for livestock. All efforts, from encouraging agricultural security areas to patronizing local farmers' markets, will help to sustain local farming in the jointure.

STRATEGIES AND ACTIONS

- 1. Support the maintenance and extension of Agricultural Security Areas, which protects farmers from nuisance regulations and allows interested farmers to participate in the Bucks County farmland preservation program.
- 2. Continue protection of agricultural soils through the zoning ordinance.

- 3. Accommodate accessory farm businesses by supporting zoning accommodations for farm businesses.
- 4. Revise the Joint zoning ordinance to include buffer standards to separate new development from farmland.
- 5. Support the efforts of the Bucks County Foodshed Alliance and other similar organizations (e.g., public awareness initiatives, procurement of funding sources) and consider other mechanisms to create community-supported agricultural enterprise to help preserve farming operations, provide food and energy sources close to home
- 6. Monitor trends in agricultural and horticultural uses and practices to determine if changes are necessary to the use, area, dimensional requirements related to these uses in the joint zoning ordinance and municipal subdivision and land development ordinances.
- 7. Continue farmland preservation efforts.
- 8. Continue open space requirements as part of development options. Improve the JMZO standards for open space set asides by mandating meaningful and useful open space as part of new developments.
- 9. Support county, state and federal programs that result in the continuation of open space preservation efforts in the municipalities and evaluate and develop potential funding sources for open space acquisition.
- 10. Promote private initiatives in conjunction with public funding sources to protect strategic open space lands.
- 11. Continue to coordinate with the county regarding land and easement purchases through the Bucks County Open Space and Natural Areas programs.

Principle 5 LIVABLE COMMUNITIES

"Adequate community services and facilities such as police protection and schools and area for community institutions are important community assets. Community services and facilities are often what attract new residents to a community like the Jointure area. Some community facilities and services are provided by municipalities. Other services are provided by private contractors, by non-profit organizations, or by other levels of government. The Newtown area is part of a larger region, and fostering a good community includes working well with neighboring communities."

Land use planning and planning for community facilities and services should be coordinated so that the resources and activities of public, private and non-profit entities operating within a community can be blended to achieve meet goals and outcomes. Community facilities are part of the constellation of factors that can either enhance or detract from the quality of life in a community and are essential for the health, safety, and welfare of its residents.

This was confirmed by the survey of area residents, who selected quality of life, the family environment, and the school system as the primary reasons for locating in the Newtown area. See Map 10. Community Facilities.

As the community changes, community facilities and services need to be adjusted to keep pace with growth and with changing needs.

WATER SUPPLY AND WASTEWATER DISPOSAL

Land use planning and planning for water and wastewater services should be closely integrated. There are two important principles that will guide future decisions and actions:

- 1. Maintaining a sustainable water supply for homes and businesses is central to planning and involves all aspects of water use and disposal.
- 2. Wastewater and water decisions should support and help implement the region's land use planning policies.

Wastewater and water planning activities are the responsibilities and prerogatives of the individual municipalities. The basic principles of protecting water resources by considering water supply in land use planning and by disposing of wastewater in ways that replenish groundwater are shared goals of the three municipalities and fundamental to the area's comprehensive plan.

WASTEWATER FACILITIES

Coordination of the planning for wastewater collection, conveyance, treatment, and disposal with regional land use planning is a primary intent of this joint municipal planning program.

Public Wastewater Systems - Over 95 percent of the homes and businesses in Newtown Township are served by public wastewater through the Newtown, Bucks County, Joint Municipal Authority

(NBCJMA) system, which discharges directly and indirectly (through the Core Creek Interceptor) to the Neshaminy Interceptor system of the Bucks County Water and Sewer Authority (BCWSA). The Neshaminy Interceptor ultimately discharges to the Northeast Philadelphia Treatment Plant. Under an existing agreement with the BCWSA, the NBCJMA is obligated to operate and maintain its collection system and make any necessary replacements and improvements to maintain service. The NBCJMA reports that there are no major maintenance issues with the collection and conveyance system (e.g., infiltration and inflow problems).

The other public wastewater system in the Newtown Area exists in Upper Makefield Township. The Heritage Hills treatment plant, operated by Upper Makefield Township, serves the development that it is named after and other developments in the Taylorsville area. The plant has limited capacity and is not intended to receive additional flows except in case of nearby septic system failures.

There are a number of small nonmunicipal, industrial, and individual alternative wastewater treatment facilities in Wrightstown and Upper Makefield townships. Several of the nonmunicipal facilities in Wrightstown use spray irrigation for treatment and disposal. The remaining nonmunicipal facilities utilize stream discharge. There are individual alternative wastewater treatment facilities with stream discharge serving single-family homes in Wrightstown and in Upper Makefield and two alternative sand mound systems serving single-family homes. There is one wastewater facility in Wrightstown that treats industrial wastewater with discharge to an unnamed tributary of Mill Creek.

Much of Wrightstown and Upper Makefield townships and a small portion of Newtown Township rely on individual on-lot disposal systems. The Newtown Area is somewhat evenly divided between soils suitable for conventional subsurface systems and soils that are not suitable for such systems. Large concentrations of soils generally suitable for on-site systems exist in the eastern portion of Upper Makefield surrounding the Delaware Canal from Dolington Road to north of Washington Crossing State Park. Large concentrations of soils generally unsuitable for on-site systems exist in the central portion of Upper Makefield surrounding Jericho Mountain and scattered throughout Wrightstown.

The major soil limitations in the Newtown Area are high water tables, slow permeability, and shallow depth to bedrock. Past studies and surveys have documented the presence of malfunctioning on-lot disposal systems scattered throughout Wrightstown and Upper Makefield townships and also concentrated in the Windybush, Penns Park, and Anchor Estates areas of Wrightstown and in the Dolington, Taylorsville, and Mt. Eyre areas of Upper Makefield.

All three townships have adopted management programs for on-lot systems that include educational material for homeowners and specify requirements for the proper operation and maintenance of these facilities. Wrightstown and Upper Makefield have adopted On-Lot Disposal System management plans, with requirements for periodic pumping of on-lot tanks.

WASTEWATER FACILITIES PLANNING

Pennsylvania laws, which authorize sewage facility and land use planning functions, direct and encourage municipalities to coordinate these efforts. The Pennsylvania Code, Title 25, Chapter 71, Section 71.21 directs municipal officials to consider their comprehensive plan, zoning ordinance, and subdivision ordinance in the preparation, review, and amendment of their official sewage facilities plan.

The Pennsylvania Municipalities Planning Code addresses the connection between planning and water/wastewater infrastructure in several sections.

- Section 301(4) provides that a plan for community facilities and utilities, including wastewater facilities, be made part of a comprehensive plan.
- Section 303(4) of the MPC specifies that any construction, extension, or abandonment of any wastewater line or sewage treatment facility be reviewed by the municipal planning commission, for consistency with the comprehensive plan.
- Section 604(I) of the MPC, which deals with the purposes of zoning, states that the provisions of zoning ordinances shall protect the public health and general welfare through adequate provisions for wastewater facilities.
- Section 503(3) of the MPC states that a subdivision and land development ordinance should contain standards for the installation of wastewater facilities.

The Pennsylvania Sewage Facilities Act (Act 537) assigns to municipalities certain responsibilities for wastewater planning. Each municipality is required to have an official wastewater facilities plan and, unless proposed facilities are consistent with the plan, the Pennsylvania Department of Environmental Protection (DEP) cannot issue permits for the facilities. A landowner may request revisions to the municipal sewage facilities plan and may appeal a municipal refusal to revise the plan. Pursuant to the Sewage Facilities Act amendments (Act 149 of 1994), DEP is required to consider a municipality's zoning and comprehensive plan in the evaluation of private requests to change a community's official sewage facilities plan. Thus, it is most important that the comprehensive plan, zoning and the municipal sewage facilities plan are coordinated.

Comprehensive wastewater facility planning is a complex process. For public or off-site wastewater services, considerations include methods to collect, convey, treat, and dispose of wastewater and related solids. Interaction among the municipality, various agencies, and users of the service is essential in the planning process. For areas where public service is not appropriate, procedures and standards to ensure adequate on-site or off-site land application wastewater disposal methods should be established.

The Newtown Area is represented by four wastewater facilities plans. Newtown Township is represented by two plans: the *Newtown Township Act 537 Official Plan Revision* (1993) and the *Act 537 Sewage Facilities Plan Newtown Creek Drainage Basin* (1993). In combination these two plans recommend the continued use of on-lot disposal systems in non-sewered areas of the Conservation Management district and the use of the public wastewater system, with specified improvements, in the remaining areas of the township. Since 1993, however, there have been several extensions of public sewer to numerous cluster subdivisions constructed in the CM district.

Wrightstown Township is represented by the *201 Facilities Plan, Township of Wrightstown, Bucks County, Pennsylvania* (1984). This plan, adopted as an addendum to the Wrightstown Township Act 537 Plan, dated June 1979, recommends the construction of a septic tank effluent pump pressure wastewater system, with discharge to the Newtown Township Treatment Plant. The proposed system would be designed with capacity to serve only existing and infill development in the more densely populated centers of the township (villages). The remainder of the township would be served by on-lot sewage disposal systems. The proposed septic tank effluent pump system was never constructed because of costs and lack of general support. The plan also recommends that the township pass a water resources ordinance to protect groundwater supplies, which it has done.

The *Upper Makefield Township Act 537 Sewerage Facilities Plan* (1979) is the official Act 537 Plan for Upper Makefield Township. The plan recommends that individual and community on-lot wastewater disposal systems be utilized to meet the immediate five and ten-year wastewater disposal needs of the township. All subdivisions greater than ten lots or, at the discretion of the Board of Supervisors, subdivisions less than ten lots, would be required to submit a detailed wastewater alternatives analysis including the need for and suitability of package treatment plants with spray irrigation (currently required in the subdivision and land development ordinance). In addition, on-lot management districts were recommended within the entire township to include all newly constructed waste disposal systems and any existing waste disposal systems which require corrective action or replacement. Ordinances were recommended governing the design, operation and maintenance of waste disposal systems in the township. Since 1979, the township has adopted an On-Lot Disposal Systems Management program (updated in 1988) to address the operation and maintenance of on-lot systems, and package treatment plants with stream discharge have been constructed for several developments in the Taylorsville Road area.

Wastewater Issues

The wastewater facilities plans for Wrightstown Township and Upper Makefield Township are more than 20 years old. The implications of the future land use plan presented in this update must also be taken into consideration. New wastewater plans should ensure the maximum utilization of landbased wastewater treatment technologies that optimize the return of locally sourced water back to the local water systems as effluent. The Upper Makefield Township wastewater plan (Act 537 Plan) is being revised to accommodate about 300 new and existing residences. The wastewater facilities plans for the Jointure should be updated as needed and should address how the wastewater facilities needs in Wrightstown and Upper Makefield townships intended to support any future development will be met.

Water Resources

The availability of reliable sources of water helps to shape the types and intensity of development that can occur in a community and should play a major role in planning for the future. Protecting the environment and water resources requires consideration of the entire water cycle. This means that the amount of water we have should be considered, as well as how it is being used. Methods for stormwater, water withdrawn for home and business use, wastewater disposal, and protection of lakes and streams will all have an effect on water quality and water quantity.

Pennsylvania's Municipalities Planning Code (MPC) requires that comprehensive plans 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 Plan¹ and the *Water Resources Plan for the Delaware River Basin*, released by the Delaware River Basin Commission in September, 2004. It

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 multi-municipal basis. A Critical Water Planning Areas 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.

also recognizes that lawful activities such as extraction of minerals and commercial agriculture production impact water supply sources (Sections 301(b)(1) and (2) of the MPC).

Water Supply

Communities throughout Bucks County are concerned with water supply issues related to the safe yield of groundwater and the potential reduction in groundwater recharge to local aquifers. Although approximately one-half of the water provided by the Newtown Artesian Water Company (NAWC) originates from the Delaware River, groundwater accounts for most of the water that is supplied in the Jointure by both individual systems and community water suppliers. The protection of these groundwater resources must be a critical consideration in planning for the current and future needs of the community.

At the regional level the Delaware River Basin Commission (DRBC) has established groundwaterprotected area regulations for portions of southeastern Pennsylvania where the potential for groundwater shortages has been identified. Newtown and Wrightstown townships are included in these areas. Groundwater-protected area regulations apply to new or enlarged daily withdraws of 10,000 gallons or more involving municipal, public, industrial and commercial water suppliers. The DRBC monitors such withdrawals and plans for future water demand. Owners of individual wells are also entitled to mitigating measures when their supplies are affected by a new water withdrawal. In municipalities outside of these groundwater-protected areas approval is required from the DRBC for water withdrawals exceeding 100,000 gallons per day. DRBC also encourages municipalities to monitor public and private water use to determine each community's sustainable groundwater yields.

Groundwater supply is a product of the underlying geology of an area and, due to the different geologic conditions found in the Jointure, a wide range of water yields can be expected to be found. Two of the three municipalities require applicants to document the effects of proposed withdrawals smaller than those regulated by DRBC. Wrightstown Township (Ord. 167) requires a water impact study for all subdivisions consisting of 3 or more lots which will draw in excess of 1,000 gallons per day. Upper Makefield Township (Section 608 of the Subdivision and Land Development Ordinance) mandates a hydrogeologic report for similar-sized developments. Newtown Township does not have such regulations in its subdivision and land development ordinance; the service area of the Newtown Artesian Water Company (NAWC) covers most of the township. See Map 9, Groundwater Limitations.

Wrightstown and Upper Makefield require well depletion agreements so that new water withdrawals do not adversely affect existing wells.

An important consideration for protecting water resources involves ensuring that water is not wasted and is used wisely. Government programs and the efforts of numerous non-profit organizations committed to environmental protection have been aimed at educating the public about how much water is consumed and what can be done to reduce unneeded consumption. All Jointure municipalities are in compliance with DRBC Resolution No. 88-2 which sets water conservation performance standards for plumbing fixtures and fittings.

Efforts to promote the recharge of groundwater-supply areas stand as another important part of preserving water resources.

While many of these efforts involve stormwater management, the Joint Municipal Zoning Ordinance provides regulations to protect areas that have been deemed important to the recharge of groundwater resources. The ordinance states that the Conservation Management District (CM) includes a variety of natural resources, including aquifer recharge areas. The types and intensity of uses permitted in the CM District are intended to provide the "maximum opportunities for open space" for the purpose of protecting such resources.

This comprehensive plan reaffirms the long-standing policy that the Conservation Management planning areas shall serve as the groundwater recharge area for the region. The Jointure should review these regulations to ensure that they adequately protect critical areas of groundwater recharge and consider whether additional studies or requirements (e.g. analysis of the underlying geology) should be mandated for proposed development in the CM District. Proposed zoning map changes involving the CM District should be considered, in part, with regard to the effect that such changes might have on groundwater recharge throughout the area.

Unlike other resources that are generally site specific, water is a shared resource that flows between and beyond municipal boundaries. Several hydrologic studies have been conducted within the Jointure, but no comprehensive study of the entire Jointure's groundwater has been undertaken. This plan recommends that water resources be linked to development patterns. This is especially important for areas of the Jointure that rely on low-yield aquifers for the supply of water and for areas that may be susceptible to groundwater contamination.

Water Suppliers

Portions of the Jointure are included in the service areas of two public water suppliers. The Newtown Artesian Water Company (NAWC) provides service to Newtown Township, Newtown Borough and a portion of Middletown Township; its service area covers most of Newtown Township and was extended to the northeast corner of the township (an area of Linton Hill Road and north of PA 532) in 2006. NAWC obtains its water from five groundwater sources and by means of an interconnection with the Bucks County Water and Sewer Authority (BCWSA) which supplies water from the Delaware River. The NAWC's wells provided approximately one-half of the total water supplied by the company. Upper Makefield Township Heritage Hills serves a small portion of the township southwest of Taylorsville Road and Woodhill Road. No public water supply services exist in Wrightstown Township.

Water service supplied by a larger, off-site supply system is a service that is a growth facilitator and should be permitted only in the areas that have been planned for intensive nonresidential and higher density residential development. Areas intended for these uses and the provision of municipal or off-site wastewater service would be the areas where off-site or community water systems should be provided. Off-site water should not be provided in areas that are intended to maintain a rural character or to support farming.

The capability of the water system for fire fighting is an important community safety matter. Communities have addressed this in different ways, through coordination with local firefighters.

Water Quality

Groundwater quality is continually threatened by land uses and the activities that take place on those lands. Some land uses and activities are more compatible with maintaining good water quality and

some are less compatible with maintaining good water quality. Common sources of groundwater contamination are listed in the table below.

Common Sources of Groundwater Contamination

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

(Adapted from US EPA. 1991. Protecting Local Groundwater Supplies Through Wellhead Protection)

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. Private water supplies are owned and operated by individual property owners, and the quality of the private water supply is the responsibility of the property owner.

The BCDH in 2005, began certifying new private wells to help prevent residents from drinking contaminated water, by requiring that each new private well has a proper sanitary seal that can safeguard against groundwater contamination.

Amendments to the Safe Drinking Water Act of 1986, require that states 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. Open space and low-density land

uses are appropriate uses near high-protection well fields. Wellhead protection programs have become both pollution prevention and a water supply planning tool.²

Stormwater Management

Stormwater runoff is the rainwater that moves over the ground during and immediately following a rainfall event. Stormwater runoff moves through specific drainage areas referred to as watersheds. 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 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 watershed scope of stormwater management problems and potential solutions.

In the 1970s, the County began making several structural improvements in the Neshaminy Creek watershed. A network of flood control structures was planned and constructed to reduce the potential for flood damage in the upper and lower reaches of the Neshaminy Creek. The Newtown Creek Dam was constructed in the late 1970s on the stream that it is named after, in Newtown Township. This facility holds 663 acre-feet of water and drains an area of 3.04 square miles. While this dam and other impoundments provide stormwater storage and flood control to a considerable extent, they do not provide full flood reduction and do not adequately address more localized stormwater runoff and flooding. Moreover, the approach to stormwater management has changed significantly since the time when these large regional structures were constructed.

Act 167, the Pennsylvania Stormwater Management Act of 1978, was enacted to address the growing negative impacts of stormwater runoff. Act 167 requires the Pennsylvania Department of Environmental Protection (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 its impact on water quality.

The Newtown Area is located within two DEP-designated watersheds: the Neshaminy Creek Watershed and the Delaware River South Watershed. Nearly all of Newtown Township and more than three-quarters of Wrightstown Township are located in the Neshaminy Creek Watershed while the remainder of these two townships and all of Upper Makefield Township are located in the Delaware River South Watershed. Bucks County has prepared and adopted stormwater management plans for the two watersheds.

² The Pennsylvania Safe Drinking Water Act (1994) mandates that after October 9, 1995, for any new or expanding community water system (i.e., systems serving more than 25 persons on a regular basis or systems with over 15 service connections) the municipality, municipal authority, or private water purveyor that provides a community water supply to the public must have ownership, or substantial control by deed restriction, the area know as Zone 1 surrounding the wellhead. As required by 25 PA Code Chapter 109, Zone 1 should contain a minimum wellhead protection radius of 100 feet, but can be expanded based upon the results of detailed hydrological testing of the area surrounding the wellhead.

The *Neshaminy Creek Watershed Stormwater Management Plan* was prepared in 1992. It mandates that ordinances require new development to provide stormwater management measures that detain the stormwater from the one-year design storm for 24 hours in order 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, the proximity to existing flood control structures and streams, and the need to protect downstream areas. The use of infiltration best management practices (BMPs) is encouraged to address runoff rates and volumes and to 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. A portion of the runoff volume must be infiltrated for groundwater recharge and attempts made 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), to reduce site disturbance as much as possible, and to minimize increases in runoff and impacts to water quality.

In 2005, all three Jointure municipalities adopted new ordinances to control stormwater management consistent with the *Delaware River South Stormwater Management Plan*. Wrightstown and Newtown also adopted new ordinances for the Neshaminy Creek Watershed that integrate the basic groundwater recharge, water quality, and low impact design and sequencing requirements of the Delaware River South Plan with the release rate requirements of the 1992 Neshaminy Creek plan.

The *Neshaminy Creek Watershed Stormwater Management Plan* has been revised and will move to implementation in 2008. It will focus on water quality and groundwater recharge similar to that established in the *Delaware River South Stormwater Management Plan*. More attention will be given to the control of volume rather than rate of release in managing stormwater.

In addition to the stormwater management ordinances that were adopted in accordance with the Delaware River South and Neshaminy Creek plans, each Jointure municipality has regulations related to stormwater structures in their subdivision and land development ordinance. These regulations are mainly comprised of general drainage requirements, stormwater plan submission requirements, and specific design criteria for storm sewers and detention basins. All the subdivision and land development ordinances should include appropriate references to the separate stormwater management ordinances. In addition, the design requirements of facilities addressed by the subdivision and land development ordinances should be evaluated by municipal engineers to ensure that they are consistent with the BMP designs prescribed by the stand-alone stormwater management ordinances.

Portions of the Jointure municipalities were developed prior to adoption of the mandated plans and ordinances. Stormwater in some of these areas is channeled into storm sewers or directly into streams, with no control over the velocity and amount of runoff. Stormwater management facilities constructed before the recent regulations do not provide water quality protection or groundwater recharge benefits. The Newtown Area Regional Planning Commission and member municipalities

should look for grant funding that may become available to retrofit or replace substandard facilities or install new stormwater facilities.

NPDES II Regulations

The National Pollutant Discharge Elimination System (NPDES) is a two-phase federal program created as an outgrowth of the Federal Clean Water Act (1972), which attempts to establish local regulations creating a nationwide reduction of the pollutants found in our nation's waterways. The purposes of the program are to reduce pollution, promote and require better stormwater management, and educate the public about water pollution. This program was amended in 1987 to include stormwater discharge regulations. The first phase of the NPDES program was established in the early 1990s and targeted large communities and industrials facilities. These entities were required to obtain permits from the state in order to enforce good housekeeping practices on-site and to bring about a reduction of the hazardous materials kept on the premises where they could be washed off the site by rainfall and enter local waterways. This latest phase of the NPDES program, Phase II (2003), is aimed at smaller urban communities, as defined by the Pennsylvania Department of Environmental Protection (DEP) based on U.S. Census data. Small urban areas that are designated as "MS4s" (Municipal Separate Storm Sewer System) must obtain a state permit showing how they intend to manage pollution in the municipality.

In accordance with the goals of the NPDES program, small communities, including the three municipalities in the Jointure, must develop a stormwater management program that includes six minimum control measures. These measures include public education and outreach, public participation, illicit discharge detection and elimination, and construction site and post-construction runoff control and pollution prevention. Over an 8-year period communities must fully establish a program to satisfy these requirements and evaluate its effectiveness. Such a program must be integrated with the Act 167 stormwater management plan. Municipal adoption of separate stormwater management ordinances consistent with the stormwater management plans satisfies the post-construction runoff control requirement. Annual reports must be submitted to DEP to document how the municipality is meeting the incremental elements of the program.

Thus far, the Jointure municipalities have submitted the requisite annual reports to maintain compliance with the NPDES II program. DEP has expressed some concerns with the municipal program, particularly construction site controls, the continuance of post-construction storm water management facility maintenance, and the operation, maintenance, and inspection of municipally owned stormwater facilities. In the next several years the townships will be expected to address these concerns and maintain compliance with this program.

Stormwater management planning should involve determining responsibilities for, and scheduling of maintenance for, stormwater management facilities. Narrative or other descriptive information that details short-term and long-term operation and maintenance tasks and estimates the projected life span of a stormwater management facility should be provided for every such facility constructed. This information is critical for municipalities to monitor the development and use of stormwater management techniques. Ensuring proper long-term operation and maintenance would aid in the municipality in complying with federal and state requirements (e.g. the NPDES II Stormwater Program). Projected scheduling also allows budgeting time and funds to inspect, repair, or condemn facilities if necessary throughout their functional life span.

Solid Waste Management

Solid waste management is the process of providing an economically and environmentally sound means for the storage, collection, transportation, processing, and disposal of municipal waste and recyclable materials. In Pennsylvania, through the Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988 (Act 101), municipalities are empowered to adopt resolutions, ordinances, regulations and standards to carry out the responsibilities mandated by state regulations. In addition, counties are given the responsibility to prepare a solid waste management plan that guides the management of municipal solid waste for a ten year period.

Bucks County's Solid Waste Management Plan (2006) provides guidance for the management of solid waste in Bucks County through the year 2014. It includes recommendations for attaining the goal of recycling 35 percent of the waste stream and proposes language to amend municipal ordinances.

Most of the property and business owners in the townships of Newtown, Upper Makefield, and Wrightstown contract directly with private haulers to collect, transport and dispose of their municipal solid waste.

Act 101 requires that all municipalities either with a population of between 5,000 and 10,000 residents and a population density of over 300 persons per square mile or with a population greater than 10,000 residents establish and implement a source-separation (curbside) and collection program for recyclable materials. Based on the most recent census results, Newtown and Upper Makefield townships are considered to be mandated communities, must establish and implement a curbside recycling program and must report the results of the program annually to the county. Wrightstown Township is not required at this time to implement a curbside recycling program.

Both Newtown and Upper Makefield townships have instituted mandatory curbside recycling programs, while Wrightstown has established a drop-off program for its residents at its municipal building. The materials collected as part of the curbside programs include: aluminum/steel food/beverage containers, three colors of glass food/beverage containers, #1 and #2 plastic bottles, newspaper, magazines, catalogs, and junk mail. The drop-off program provides for: aluminum cans, three colors of glass food/beverage containers, catalogs and junk mail.

Pennsylvania set a goal in 1997 to recycle 35 percent of the municipal waste stream by 2003. Although the Commonwealth and Bucks County both reportedly reached this goal in 2002, all three Jointure communities individually appear to have fallen short of this goal. No yard waste was reported as being recycled, and yard waste typically comprises about 18 percent of the municipal waste stream. A failure of the haulers to report all recycling numbers may account for this shortfall.

It is anticipated that private haulers operating within the three municipalities will continue to provide for the collection, transportation, processing and disposal of municipal solid waste as well as the recyclables generated in the townships.

The issue of reporting can, in part, be addressed through municipal ordinances. Through such ordinances these municipalities could regulate haulers operating within their borders and require the reporting of all recyclables collected from both residential and non-residential customers. The enforcement of the ordinance would enable the municipalities to determine more accurately the

recycling rate within each community. In addition to increasing recycling rates, having a better accounting of non-residential recycling tonnages can increase the eligible tonnages of recyclable materials that can be included on PADEP Performance Grant applications, which could result in greater income to the municipalities through this program.

Under PADEP regulations, municipalities have responsibility for ensuring that yard waste is also composted or recycled.

The activities associated with the development of ordinances and educational programs are themselves eligible for funding assistance through Section 902 of Act 101. Assistance in the evaluation of instituting a yard waste collection program is available through the Technical Assistance Grant program. These programs are administered through the PADEP.

Community Services

A host of other government agencies and non-profit organizations provide important services that enhance the quality of life for residents in a community. Growth and development can have an important impact on the quantity and quality of services that those entities provide. Land use planning in the Jointure should include a general consideration of the current state and future needs of such organizations, even though they may not be under the control of the municipalities themselves. The Jointure communities should cooperate, communicate and share information with these organizations to improve the efforts of all parties to enhance the quality of life for all residents.

Police

The Upper Makefield Township Police Department provides police protection for residents of the township. The department occupies a new facility located on Eagle Road on the same site as the township municipal building. Police services are expanded as needed to meet the growing population.

The Newtown Police Department provides police protection for residents in both Newtown Township and Wrightstown Township. The department is headquartered at the Newtown Township Municipal Center. The department is currently in need of more office space (in particular, an interview area) to carry out its duties. According to police department officials commercial areas tend to generate a higher frequency of calls for service than other portions of the two townships.

Fire Protection

The Newtown Fire Association provides fire protection for Newtown Township and Newtown Borough, as well as to a small portion of Upper Makefield and Wrightstown townships. The Association staffs two stations, one of which is located in the borough (Station 45). The other (Station 55) is located in the Newtown Township Municipal Center at 55 Municipal Drive. In 1996, in response to an increase in the number of fire calls and a decrease in the number of volunteers available during daytime working hours, the Association and the Township created the Newtown Township Emergency Services Department. The Emergency Services department operates out of Station 55 and provides daytime coverage for calls with support from the existing volunteer membership.

The Emergency Services Department is staffed by a Director/Fire Marshal, an administrative assistant and fire inspectors. In addition to responding to emergencies during the day the department

performs numerous related duties, including annual fire inspections on all commercial occupancies, code enforcement, and fire prevention education.

The Upper Makefield Fire Company serves the township out of two stations. Station 81 is part of the Upper Makefield Township Complex on Eagle Road. Station 71, on Taylorsville Road, was renovated and expanded in 2006 to accommodate additional equipment and to allow the department to meet its increasing responsibilities.

The Lingohocken Fire Company provides fire protection for all of Wrightstown Township, and portions of Buckingham and Upper Makefield townships from two stations. The main station is located in the village of Wycombe (Station 35) and the substation is located in the village of Forest Grove (Station 95).

Medical Services

St. Mary Medical Center—Although not located within the boundaries of the Jointure, St. Mary Medical Center is a regional hospital that provides important services to residents of the Newtown Area. The hospital is licensed for 327 beds and has a staff of 500 physicians and 2,300 employees. Also within the nearby area are hospitals in Doylestown, Abington, Trenton, and Philadelphia.

Emergency Medical Services—Emergency medical services within the Jointure are provided by the Newtown Ambulance Squad and the Central Bucks Ambulance Squad.

Schools and Colleges

Council Rock School District—The Council Rock School District is comprised of five municipalities: Newtown Borough, Newtown Township, Northampton Township, Upper Makefield Township and Wrightstown Township. Current district-wide enrollment exceeds 12,500 students.

There are ten elementary schools (grades K-6), three middle schools (grades 7-8) and two high schools (grades 9-12) in the district. Newtown, Goodnoe, Sol Feinstone, and Wrightstown Elementary Schools along with Newtown Junior High and Council Rock High North are located within the boundaries of the Jointure.

Enrollment projections for the entire district predict less than one percent growth in the number of students attending schools in the district each year up to the 2007-2008 school year.

Saint Andrew Catholic School—The Saint Andrew Catholic School is a private K-8 school located in Newtown Township. Current enrollment numbers nearly 1,000 students. The school moved to its present location in January of 1995 after the construction of the education building, which was originally designed to hold 750 students. From 1998 to 2000 an additional 20,000 square feet of classroom and cafeteria space was added to accommodate the increase in enrollment, which also resulted in the establishment of four classes in every grade level.

Colleges—The main campus of Bucks County Community College (BCCC) is located on Swamp Road in Newtown Township. BCCC is a two-year institution that offers a wide variety of certificate, associate degree and transfer programs in fields such as business, education, nursing and the liberal arts.

The Bucks County Center of La Salle University is one of two branch campuses of LaSalle University whose main campus is located in located in Philadelphia.

Opened in 1994, Holy Family University- Newtown occupies 79 acres in the township. The 44,000 square foot building provides space for administrative and student services, faculty offices, and a variety of classrooms and laboratory facilities.

Libraries

Residents of the Jointure are served by the Bucks County Free Library System, which not only maintains seven branches throughout the county but also provides access to and support for 11 community public libraries in various municipalities. The system includes several more specialized libraries such as the law library at the Bucks County Courthouse and the libraries located on various campuses of Bucks County Community College.

The main library of Bucks County Community College is located on its campus on Swamp Road. The library houses 140,000 volumes with a yearly circulation of approximately 26,000 books and about 50,000 visits per year. Members of the general public who are also members of the Bucks County Free Library System are allowed to check out materials from the library. According to information supplied by the college, public use of the library has generally remained constant over the last several years and no major expansion of facilities or staffing is anticipated at this time.

The Village Library of Wrightstown is one of eleven community public libraries in the Bucks County Free Public Library system and serves Wrightstown and Upper Makefield. The library has a collection of nearly 22,500 items and a total circulation of 25,000 materials each year. The number of patrons per year ranges between 11,000 and 12,000 visitors.

The library has a full children's section, a basic adult non-fiction section, and an extensive collection of adult fiction that supports the libraries role as a recreational reading library. The library is staffed by one full-time library professional, a part-time clerk and a part-time children's program coordinator. Volunteers fill a variety of additional roles, but library officials note that volunteer levels are stagnating. Long time volunteers make up a majority of the volunteers while younger residents are not able to volunteer due to other commitments.

Library officials have noted a definite increase in the number of patrons over the past five years and anticipate the numbers to rise. The library is nearing capacity. If the library is to continue to grow additional square footage will be needed in the future.

The David Library is a specialized library devoted to the study of American history from 1750 to 1800 with a primary focus on the American Revolution. The library was founded by Sol Feinstone in 1959 and opened at its present location in 1974. The collection now includes over 40,000 printed materials in bound volumes and microcards, and 10,000 reels of microfilm containing original American, British, Loyalist, French and German records. Facilities include the research library, a conference center, and a residence facility for visiting fellows. The library is open to the public Tuesday through Sunday and admission is free.

Planning Compatibility with Neighboring Communities

Officials in the Newtown Area strive to 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 Jointure.

Relationship Among Plan Components

Throughout the preparation of this update 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 section. Individual elements of the plan were produced with the recognition that they are interdependent on and interlocking with one another. For example, population projections and land use data included in the sections involving demographics and existing uses were used in the residential development areas analysis and the nonresidential development areas inventory, which were in turn employed in the development of the future land use plan and implementation strategies. The transportation section makes central the connection between transportation and land use and its recommendations involve providing 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 population trends, and future land use planning. The provision of these facilities, in turn, shapes future land use planning.

This comprehensive plan update is intended to promote and protect the public health, safety, and welfare of the Jointure. 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 comprehensive plan update is also intended to provide the framework upon which more detailed or complementary studies can be prepared, reviewed, or revised when either individual municipalities or the Jointure as a whole deems them appropriate.

COMPATIBILITY WITH SURROUNDING MUNICIPALITIES

The impacts of development are not limited to the township, borough or multimunicipal planning area in which such development takes place. Land use policies, zoning requirements, growth, or changes in land use patterns in one municipality can enhance or diminish the quality of life in another. The following provides a general assessment of the compatibility of the existing conditions in, the present zoning of, and the land use plan for the Jointure with each municipality that shares a common border with one of its participating townships. Information for this assessment was developed from each municipality's zoning ordinance, its comprehensive plan (existing and future land use), and from land cover mapping provided by the Delaware Valley Regional Planning Commission.

Newtown Borough

The *Comprehensive Plan for the Borough of Newtown* was adopted at the end of 1999. Surrounded by Newtown Township on all sides, the borough generally exhibits compatible zoning and land uses along its borders. The existing land uses on the western side of the borough are largely a mix of commercial and institutional uses. The future land use plan envisions a similar mix in that area, and the zoning districts in that location permit residential, commercial, and institutional uses. The two communities are compatible in this area.

To the north single-family residential development dominates both existing land use and the future land use plan in the area of the borough adjacent to the township. The area is zoned BR-1 Borough Residential, which requires a minimum lot size of 15,000 square feet. Land use in that area of the borough is generally consistent with land uses found in the adjacent part of the township.

To the east the area of the borough adjacent to the township is again largely characterized by singlefamily residential development, and the future land use plan projects low and medium density residential development to continue there. The major exception is a cemetery that straddles the township and the borough. The adjacent areas of the township are generally compatible, except for the area of commercial uses in the township that borders residential uses in the borough to the north of the cemetery. The township and borough should determine whether adequate buffering is provided between existing uses and should ensure that any future development in the township will not alter the existing visual break that marks the boundary between the two communities for motorists entering and exiting the borough via Newtown–Yardley Road.

To the south the borough generally includes a mix of retail, industrial, and office uses. The future land use plan characterizes the area as "Industrial 2," which could create a "gateway corridor" for those entering the borough from the south, and as "Town Commercial Center," where a variety of residential, commercial, and mixed uses would be permitted. The area is generally zoned B-1 Business Gateway where such uses are permitted. Existing zoning and land uses in the township are generally compatible with adjacent zoning and land use in the borough. The township and borough could work together to develop this area in a fashion that both accentuates it as a gateway to the borough while providing the portion of this location that is in the township with an identity that marks it as part of the township.

Despite the fact that it has been over ten years since Newtown Borough formally left the Jointure, nothing in the existing land use of adjacent areas, the current zoning along the municipal borders, or the proposed future land use patterns suggests that the borough and the three townships have moved in directions that make cooperation among the four communities impossible or even infeasible. Current conditions suggest that the possibility of re-entry of Newtown Borough into the Jointure could be explored and taken into consideration.

Cooperation and joint efforts on the Sycamore Street project have been successful and form a foundation for future cooperation.

Solebury Township

The *Comprehensive Plan, Solebury Township*, adopted in late 2002, designates the area of the township that borders Upper Makefield Township as a "Rural Conservation" area where the

preservation of historic, cultural, and natural resources is a primary focus. Land use information in the plan indicates that the majority of this area consists of public open space and agricultural or single-family residential uses. The area is zoned either RB Residential/Agricultural, which requires a minimum lot size of 3 acres for residential uses, or OR Outdoor Recreational, which permits a variety of agricultural, conservation, or recreational uses. These conditions are compatible with the existing land uses and zoning found in this part of the Jointure.

Buckingham Township

Buckingham Township borders both Wrightstown Township and Upper Makefield Township. The *Buckingham Township Comprehensive Plan* (1991) delineates the areas nearest the boundary with both Wrightstown and Upper Makefield as "Conservation Management Areas," except for the villages of Wycombe and Pineville, which are designated as "Rural Villages." "Conservation Management Areas" include environmentally sensitive locations and are characterized by low density uses. "Rural Villages" are settlements whose character and scale the township intends to preserve. The area is zoned AG-1 Agricultural-1 District, which is intended to promote the preservation of agriculture, except for Wycombe and Pineville, which are zoned either R-1 Residential or VC-1 Village Center. Agricultural uses, residential areas, and vacant land are generally located on both sides of the border, with small areas of commercial development in and around the existing villages. Compatible land uses and zoning are found on adjacent portions of the Jointure.

Buckingham and Wrightstown have worked together on Wycombe village projects in the past. The townships could consider jointly developing village preservation zoning or other standards for Wycombe. The two communities should also jointly monitor and participate, as appropriate, in efforts by the Bucks County Transportation Management Association to determine the feasibility of extending commuter rail service from Warminster to New Hope Borough along the rail line on which Wycombe is located.

Warwick Township

Warwick Township shares a very short boundary with Wrightstown Township. In the *Warwick Township Comprehensive Plan* (2007), the adjoining area in Warwick is classified as part of the "Rural Areas," where the township intends to promote low density residential and agricultural uses. This part of the township is zoned RA Residential-Agricultural, which has a minimum lot size of 2 acres. The majority of the area is agricultural, except for a cluster of large-lot single-family residences in the general vicinity of the boundary. The area is generally compatible with the zoning and land uses immediately adjacent to it in Wrightstown, with the village of Rushland located a short distance from the boundary in Wrightstown.

Northampton Township

Northampton Township has a long and curvilinear boundary separating it from Wrightstown Township and Newtown Township along the Neshaminy Creek. In many places the Neshaminy serves as a buffer between Northampton and the Jointure municipalities, both in terms of existing and proposed land uses.

Areas on the Northampton side of the Neshaminy across from Wrightstown, as shown in the *Northampton Township Comprehensive Plan* (1999 Update) are intended to be single-family

detached residential or agricultural, except for the banks of the Neshaminy, which are designated as open space with park and recreational uses. The zoning in this area is generally CR Country Residential with a minimum lot size of 2 acres for single-family detached dwellings. Existing land uses include single-family detached residential, agricultural and vacant. Although industrial and quarry uses are located on the Wrightstown side of the boundary, land uses are generally compatible and the Neshaminy serves as a buffer.

On the Northampton side of the Neshaminy Creek across from Newtown Township, the future use of land directly along the Neshaminy is identified as open space with park and recreation uses. Much of the northernmost portion of this boundary is also surrounded on both sides by Tyler State Park (as well as Bucks County Community College in Newtown), which is zoned REC Recreation in Northampton Township. South of the park, beyond Neshaminy Creek, the Northampton comprehensive plan designates areas of single-family detached and high density residential housing. Existing land uses include both single-family and higher density housing. Land uses and zoning on both sides of this boundary are generally compatible with the Neshaminy as a separating natural feature.

Middletown Township

Middletown Township shares a common border with Newtown Township in the vicinity of the Newtown bypass. The Middletown Township, Bucks County Comprehensive Plan (1994) designates the majority of the area adjacent to the boundary with Newtown as "Rural Residential" with a "Mixed Use" area shown east of Route 413 and an area of "Public Parks and Open Space" also on the border. Land designed as "Rural Residential" is generally zoned in one of the township's residential districts (RA-1 Residence Agricultural, RA-2 Residence Agricultural, RA-3 Residence Agricultural and R-2 Residence), with minimum lot sizes ranging from 1 acre to 10,000 square feet. The "Mixed Use" area is zoned CS Shopping Center, MR Multi-Residential and A-O Apartment Office. The "Public Parks and Open Space" section is zoned OR Open Recreation. There is also a portion zoned OC Office Campus. The existing land uses on the Middletown side include a mix of residential, institutional, and commercial uses, as well as a limited amount of vacant land. The zoning map generally provides for similar uses on both sides of the boundary, except that districts that permit office and industrial uses in Newtown Township (near the eastern end of the boundary) are across from residential districts in Middletown. Existing land uses are also generally compatible, except in areas where commercial land uses in Newtown are next to residential uses in Middletown, although separation in some of these areas is provided by the Newtown bypass. The townships could consult to ensure that suitable buffering requirements are in place in those areas where commercial or light industrial uses and residential uses could potentially be located next to each other on the municipal border.

The most prominent landmark in this area, a visual if not actual boundary between these two townships, is the Newtown bypass (PA 332). (The roadway runs along some, but not all of the municipal boundary.) As much as Newtown and Middletown should work to coordinate adjacent land uses, the municipalities should also ensure that buffering and other road treatments along the Newtown bypass are consistent on both sides of the roadway where the municipal boundary and the bypass are co-terminus. The two communities might also consult with the Pennsylvania Department of Transportation on whether landscaping and other measures might be appropriate to diminish the visual impact of the sound barriers and the roadway itself on both motorists entering the area and adjacent properties. Providing more appealing (and, where necessary, safer) crosswalks and pedestrian facilities might also be appropriate in some areas, such as at the intersection of the bypass

and Newtown Gate Drive/Summit Trace Road, where a higher density residential development in Newtown is across the bypass from Summit Square Shopping Center, which includes banks, a grocery store and other commercial facilities. At the western and eastern edges of the boundary between these two communities, not only should both municipalities encourage compatible land uses, but Newtown should also consider ensuring that the "islands" of the township squeezed between Middletown and the bypass have a character and appearance that identifies them as a part of Newtown and the Jointure.

Lower Makefield Township

Lower Makefield Township shares boundaries with Upper Makefield Township and Newtown Township. In the Lower Makefield Township Comprehensive Master Plan Update (2003), the area opposite Upper Makefield along the Delaware River near the canal and River Road is designated as Residential/Resource Protection on the future land use map. It is also located in the R-RP Residential-Resource Protection Zoning District that is intended to protect floodplains and wooded spots along the river. The remainder of that shared boundary is designated as Low Density Residential/Farmland Preservation and is located in the R-1 Residential Low Density District which requires a minimum lot size ranging from 1 acre to 15,000 square feet depending on the amount of a site which is classified as resource protection land. Existing land uses, from the comprehensive plan, generally include residential, vacant and agricultural lands. The zoning and land uses are generally compatible along both sides of this boundary. The townships could confer regarding the development potential of land in the vicinity of Dolington (in Upper Makefield) to ensure that development appropriate to the village, with appropriate buffering and other treatments, occurs on both sides of the municipal boundary. The townships should cooperate to address any transportation, environmental, or other planning issues related to the construction and operation of the proposed national veterans' cemetery that was approved by the Veterans Administration in January 2006.

In the Lower Makefield comprehensive plan the portion of the township that borders Newtown above Newtown–Yardley Road is classified as Low Density Residential/Farmland Preservation, except for a small area designated Medium Density Residential. It is generally zoned R-1 Residential Low Density, except for that small area which is in the R-2 Residential Medium Density District. Agricultural and residential uses are located in this area. There is general compatibility along this portion of the boundary, except that the Office Research District in Newtown Township extends north of Newtown–Yardley Road and some commercial uses are located in this area. The townships should ensure that regulations requiring appropriate buffering are in place for any future incompatible residential and commercial land uses that may be proposed in this location.

Areas south of Newtown Yardley Road in Lower Makefield are identified as Office Research and also zoned O/R Office Research where a variety of commercial, office and recreational uses are permitted. This area is, for the most part, agricultural. The future planning and zoning for this area is generally compatible. Commercial and institutional uses already exist on the Newtown side of the boundary.

Hopewell Township and Ewing Township, New Jersey

Upper Makefield Township has a long boundary separating it from Hopewell Township and Ewing Township in New Jersey. The Delaware River serves as a barrier and buffer between Upper Makefield and these municipalities. They are also separated by virtue of being located in different states. Nevertheless, zoning in Hopewell Township along this boundary includes a mix of residential districts,

the C-1 Neighborhood Retail Commercial District, and the MRC Mountain Resource Conservation District, which is generally comparable to zoning in Upper Makefield. Except for a quarry, land uses in Hopewell and Ewing along the Delaware River are also generally compatible, with agricultural, residential, and vacant land in that area.

BUCKS COUNTY PLANNING POLICIES

The topics discussed in the "Growth Management" section of the *Bucks County Comprehensive Plan* (1993) under the objective of providing "appropriate, coordinated, and timely growth management" include intermunicipal planning to facilitate the coordination of growth management efforts in the county. As a long-standing example of multimunicipal cooperation, the Jointure itself and its efforts to manage growth are compatible with and contribute to the achievement of the policies and objectives on the county comprehensive plan.

Many of the community planning policies that are included in the *Bucks County Comprehensive Plan* (1993) have been adapted and incorporated into this and previous updates of the Newtown Area Joint Municipal Comprehensive Plan. These include the Development Area Concept and Village Planning principles. Policies for the protection of natural resources and prime agricultural soils have been included in the comprehensive plan and the joint municipal zoning ordinance in forms acceptable for use in the Jointure.

STRATEGIES AND ACTIONS

- 1. Continue to require that the cost and impact of proposed development on community services and facilities be considered in zoning and land use decisions. Require services impact statements as part of zoning changes and amendment submissions. Continue present practices of using impact fees and developer contributions.
- 2. Continue to coordinate information sharing and planning among the jointure agencies, departments and commissions to enhance the effectiveness of land use planning, to improve the delivery of services to residents and to plan for the future needs of service providers and the communities that they serve.
- 3. Explore opportunities for the sharing of information and resources among the Jointure municipalities to reduce government costs and promote greater efficiency in the delivery of services and purchase of goods, including cost-sharing for shared services.
- 4. Review the zoning ordinance to eliminate high-impact and large institutional uses from the non-development area districts (Jericho Mountain and Conservation Management).
- 5. Recognize and plan for the impact of the National Veterans' Cemetery in the jointure area.
- 6. Institutional Uses and Development:
 - a. Ensure that Jointure ordinance regulations promote institutional services in appropriate locations that are integrated into the community they serve without imposing burdens on neighborhoods.

- b. Work with state agencies and area institutions to plan for the community needs for medical, educational, and recreational needs.
- c. Continue to cooperate with organizations in the region on issues of common interest.
- 7. Review the wastewater plans (Act 537 plans) for the jointure municipalities so that they support the land use and environmental principles of this comprehensive plan.
- 8. Review current zoning regulations to ensure that they adequately protect critical areas of groundwater recharge.
- 9. Consider formulating and adopting regulations regarding the establishment and protection of wellhead protection zones in the Jointure.
- 10. Identify areas continuing to experience flooding problems and determine if remediation measures are feasible.
- 11. Evaluate alternative best management practices for maintenance and retrofitting existing stormwater management basins.

LIVABLE COMMUNITIES

PRINCIPLE 6 PROVIDE PARKS AND RECREATION

"Foster the development of active and passive recreation to promote the physical and mental well-being of residents of all ages. Parks, recreation facilities, and open areas are important improvements and are vital aspects of sound communities."

Parks and recreation areas are important community features, ranking high by jointure residents as valued assets of the community. The jointure townships have planned for and provided recreation, park land, and passive open space, by preparing park and recreation plans and by working with developers and residents to meet recreation needs. The areas designated for parks, recreation and open space do not include those areas dedicated to agriculture and farmland preservation.

Local township parks and recreation areas are supplemented by parks provided by the county and the state. See Map 11, Park, Recreation and Open Space.

State Parks

Three state parks are located in the jointure: Tyler State Park, Washington Crossing Historic Park, and Delaware Canal State Park. Newtown Township has about 519 acres of the 1,700-acre Tyler State Park, which is located along the banks of the Neshaminy Creek. The park offers numerous recreational opportunities, including boating, hiking, fishing, ice skating, disk golf, sledding, cross-country skiing, picnicking, biking, horseback riding, and nature study. The bridge reconstruction across the Neshaminy Creek on Newtown–Richboro Road–which runs adjacent to the south side of the park–has a dedicated bike lane that will enhance the pedestrian and bicycle connections between these two townships.

Washington Crossing Historic Park, operated by the Pennsylvania Historic and Museum Commission, is located along the Delaware River in Upper Makefield Township in two sections: McConkey's Ferry and Thompson's Mill. The McConkey's Ferry section is located at the village of Taylorsville and contains about 139 acres. Amenities in this section include a visitor's center, historic buildings, and picnic pavilions. The Thompson's Mill section is located within Upper Makefield and Solebury townships. The park contains Bowman's Tower and Wildflower Preserve on about 91 acres. The wildflower preserve features walking trails, birding opportunities, classes and guided tours, and an arboretum.

The Delaware Canal State Park is located along the Delaware River in Upper Makefield Township. The canal and towpath extend 5 miles through the township and encompass about 43 acres. A national historic landmark, the park provides opportunities for walking, biking, horseback riding, picnicking, fishing, and nature study. In 2004, 2005, and 2006 the canal sustained damage from flooding. The canal, towpath, and locks require repairs to bring them back to pre-flood conditions.

County Park and Open Space

There are several county-owned properties in the Newtown Area. A small area of Core Creek Park, encompassing about 18 acres, is located in the southeast part of Newtown Township. The Shull Farm, located at the corner of Wrights and Linton Hill roads, is an active farm on 111 acres in Newtown Township. The historic house and barn are being restored, and the remainder of the property is rented to a farmer.

Bucks County has also acquired several properties (about 26 acres) along the Neshaminy Creek in Wrightstown Township. The Bucks County Parks and Recreation Department has been preserving property along the Neshaminy and Little Neshaminy Creek for the purpose of protecting the floodplain and the "forks of the Neshaminy" natural areas. This program focuses on preserving farms and natural lands near the confluence of these creeks in Warwick, Buckingham, Wrightstown, and Northampton townships. In Wrightstown Township, several properties have been identified for preservation in this area.

Municipal Park and Open Space

Municipal park and open space encompasses lands owned entirely by Jointure municipalities. Newtown owns about 271.5 acres of park and open space land, including lands dedicated to the township as part of new residential developments. Wrightstown Township owns about 193.3 acres of land, and Upper Makefield Township owns about 104 acres of land. The following tables detail the name of the land or park, its location, facilities, and acreage.

| Name | Location | Facilities | Acreage |
|--|--|---|---------|
| Chandler Field | Buck Road | Ball Fields | 7.1 |
| Carl Sedia Park | Buck Road | Exercise Trail | 4.3 |
| Helen Randle Park | Swamp Road | Ball Fields | 30.8 |
| Roberts Ridge Park | Lower Dolington Road and Frost Lane | Playground | 24.8 |
| Newtown Township Clark Nature Preserve* | Durham Road | Passive Recreation | 50.6 |
| Woll Tract | Durham Road | Ball fields; Playground and Active Recreation | 37 |
| Hidden Lake** | Washington Crossing Road | Open Space | 42.9 |
| Silver Lake Park | Newtown Bypass and Campus Drive | Passive Recreation | 22.6 |
| Wiggins Tract | Washington Crossing Road | Undeveloped Active Recreation (future ball fields) | 26 |
| Pickering Chase Woodlands | Linton Hill Road | Open Space | 17 |
| Merion Parcel | Washington Crossing Road | Open Space | 8.4 |
| Rockbridge Property | Washington Crossing Road | Natural Resource Area | 6.2 |

Newtown Township Parks and Open Space

*Purchased through the Bucks County Municipal Open Space Program

**Bucks County owns easements covering 39.6 acres of this and adjacent property, including the floodplain and dam.

Wrightstown Township Parks and Open Space

| Name | Facilities | Acreage |
|-------------------------|--------------------------------|---------|
| Anchor Run Farm* | Farm and passive park | 101.4 |
| Neshaminy Cliffs | Wooded lot. No plans for | 0.3 |
| | development at present time | |
| Pheasant Lane Extension | Future walking trail to Anchor | 1.1 |
| | Run Farm | |
| Octagonal Schoolhouse | Historic schoolhouse | 8.2 |
| Boat Ramp | Boat ramp | 1.4 |
| Chippewa Farm | Municipal complex | 62.6 |
| Smith Farm | No plans at present time. | 18.3 |

*A portion of this property was purchased through the Bucks County Municipal Open Space Program

Upper Makefield Township Parks and Open Space

| Name | Location | Facilities |
|---------------------------|--------------------------|---------------------------------|
| Lookout Park | River Road | Baseball fields, walking trails |
| Brownsburg Tract | River Road | Flat fields (6) |
| Biddle Tract | Mount Airy | None |
| Mathieu | Washington Crossing Road | Open Space |
| Lehman/Merrick | Creamery Road | Open Space |
| Rapuana | 1050 Highland Road | Open Space |
| Ryan | Buckmanville Road | Open Space |
| Dudley | Eagle Road | Open Space |
| Floge | River Road | Open Space |
| Heinicke | Pineville Road | Open Space |
| Baldwin | 1212 Eagle Road | Open Space |
| Slack | Slack Road | Open Space |
| Antrobus | 375 Thompson Mill Road | Open Space |
| Thorpe | Pineville Road | Open Space |
| Seigel | 1194 Street Road | Open Space |
| Schleyer | 58 Buckmanville Road | Open Spae |
| Russell | Wrightstown Road | Open Space |
| Marazzo | General Washington | Open Space |
| IVIAI AZZU | memorial Blvd. | |
| Magill/Lankas | Lurgan Road | Open Space |
| Vacant Land Wash Crossing | | |

*Purchased through the Bucks County Municipal Open Space Program

Open Space within Residential Developments

Providing open space as part of new developments is encouraged by the joint municipal zoning ordinance. The JMZO provides several development options. Natural features on a development site must be set aside as open space, and the cluster opportunities result in open space as part of most new developments.

The Municipalities Planning Code allows local government to mandate the dedicated of recreation land to meet the recreation needs created by new development. A fee-in-lieu of dedication is also an option. The subdivision and land development ordinance of each municipality in the Jointure requires a dedication of recreation land or a fee-in-lieu of such dedication that could be used for the purpose of purchasing and developing park and recreation land. In Wrightstown Township applicants for single-family detached developments are required to dedicate 1,500 square feet per dwelling unit for park and recreation areas. Single-family cluster and multifamily developments must adhere to the open space and recreation requirements of the zoning ordinance.

Upper Makefield and Newtown townships contain similar regulations for the dedication of recreation land. In Upper Makefield applicants for single-family detached, two-family and multifamily developments are required to dedicate 4,000 square feet per dwelling unit for park and recreation areas. In Newtown Township applicants must dedicate 3,000 square feet per dwelling for these development types. Nonresidential subdivisions and land developments in Upper Makefield Township are required to dedicate 1,300 square feet of land for every 4,000 square feet of building area. Nonresidential subdivisions and land developments in Newtown Township are required to dedicate 750 square feet of land per 1,000 square feet of building area. Suitable facilities required for nonresidential areas in Newtown and Upper Makefield include playing fields, tennis courts, tot lots, basketball courts, and jogging parks with exercise stations. Each Jointure municipality also has design requirements for locating and developing dedicated recreation areas so that such areas are usable and accessible to nearby residents.

Many residential subdivisions in the Jointure have some sort of open space associated with them. Some of this space has been dedicated to the townships; most of it remains in the hands of homeowners' associations. In Wrightstown Township, 40 acres of open space land is associated with residential subdivisions. In Upper Makefield Township, 602 acres of open space land is associated with residential subdivisions. In Newtown Township, 1,168 acres of open space land is associated with residential subdivisions. A total of 1,810 acres of land is associated with residential subdivisions in the Jointure.

Schools

The Jointure contains several private and public schools. Public schools in Newtown Township include Newtown Elementary (37 acres) on Wrights Road, Goodnoe Elementary (17.1 acres) on Frost Lane, Newtown Middle School (32.5 acres) on Richboro Road, and Council Rock Senior High School (61.8 acres) on Swamp Road. Private schools include St. Andrew Catholic School (24.1 acres) on Wrights Road and lands associated with the George School (11.2 acres) at the intersection of Newtown Pike and the Newtown Bypass. Colleges include Bucks County Community College (200 acres) on Swamp Road, Holy Family College (79.2 acres) at the intersection of Lindenhurst Road and the Newtown Bypass, and the LaSalle University Bucks County Center (6.5 acres) on University Drive. In Wrightstown Township the Wrightstown Elementary School (22.5 acres) is located along Penns Park Road. In Upper Makefield Township the Washington Crossing Christian School (2.1 acres), a private school, is located at the corner of Lord Sterling and General Sullivan roads. The Sol Feinstone Elementary School (28.2 acres), a public school, is located on Eagle Road.

Private Recreational Areas

Other private recreational areas, such as golf courses, camps and campgrounds, and nature preserves, contribute to recreation options. Jericho National Golf Club, a private golf course and country club on 171 acres, is located along Brownsburg Road in Upper Makefield Township. In Wrightstown Township the Middletown Grange #684 (the local branch of the Pennsylvania State Grange) owns 49 acres of fairgrounds. The Grange hosts a number of events throughout the year, including the Middletown Grange Fair, dog shows, car shows, and festivals, and provides fields for the Tri-Township Baseball League.

Planning for Open Space, and Parks and Recreation

Park and Recreation Plans

Newtown Township completed a park and recreation plan in 1995, the *Newtown Township Comprehensive Recreation, Park, and Open Space Plan.* The plan inventories available facilities, assesses the park and recreation needs of the township, and sets out a number of general recommendations for future facilities and programs. Included in this plan is a brief community profile, an inventory of natural resources, a spatial analysis of park and recreation needs, a description of park and recreation administration and programs, and a community survey that gauges community sentiment on a variety of park and recreation issues in the township. Upper Makefield prepared a similar plan in the early 1990s and revised it extensively in 2003.

Open Space Plans

The three townships participated in the ten-year Bucks County Open Space Program (1997-2007) by preparing open space plans and by qualifying to take advantage of the open space municipal grant program.

The county program can be used to permanently preserve land for farmland, parks, or natural areas protection. Upper Makefield's emphasis was on the following preservation goals: farmland preservation, watershed protection, establishment of greenway corridors, enhancement of biological diversity, protection of significant viewsheds, and establishment of recreational open space. It was also guided by an earlier park and recreation plan. Wrightstown also focused on preserving farmland and natural areas. Newtown preserved the Clark property as a nature area for education and recreation.

Municipal-Based Open Space Link Planning

Each of the Jointure municipalities addresses planning for future open space linkages in their open space plans. The *Newtown Township Municipal Wide Open Space Plan* identifies the utility corridors that cross the township as possible regional links across the township, but notes public sentiment against using these corridors for such purposes. The plan also maps a proposed open space linkage system for the township. Proposed linkages are shown along the Neshaminy Creek below Tyler State Park (a trail proposed by the county in the 1986 *Bucks County Parks and Recreation Plan*), between Chandler Field and the high school by way of Sycamore Street and Swamp Road, and along Newtown–Yardley Road between Roberts Ridge Park and Silver Lake Park. Other future linkages are also shown.

Wrightstown's open space plan, *Township of Wrightstown, Bucks County, Pennsylvania: An Open Space Plan,* also places a high value on providing pedestrian and bicycle linkages between open space lands. In a survey given to township residents, respondents identified the most desired types of facilities in open space areas as nature walks and trails. The plan recommends that the township establish trails through municipally-owned open space and that trail systems between developments be considered, particularly for development sites along or near the Neshaminy Creek. The plan also identifies the Neshaminy Creek as an important linkage that could potentially connect Tyler State Park with other regional parks, such as Core Creek Park, Neshaminy State Park, and Peace Valley Park.

Upper Makefield Township did not place a high a priority on developing new open space linkages in its 1998 plan, *Plan to Preserve Upper Makefield Township's Farmland and Open Space*. The Delaware Canal along the Delaware River is the main open space linkage in the township, which connects the north and south sites of Washington's Crossing State Park as well as connects the township with towpath municipalities to the north and south.

STRATEGIES AND ACTIONS

- Enhance cooperative efforts amongst participating municipalities, the school district, the Commonwealth, and private entities, to offer a wider range of facilities and programs than a single municipality can provide and avoid the unnecessary duplication of facilities and programs.
- 2. Continue to implement park and recreation plans of the jointure townships and update when needed.
- 3. Define and map existing trails and look for opportunities to expand them where appropriate.
- 4. Coordinate with the public school district and local private schools for use of school facilities for public recreation programs.
- 5. Periodically reassess the mandatory dedication/fee in lieu contribution requirements in the subdivision and land development ordinances to determine if they should be adjusted to reflect current park and recreation needs and costs.
- 6. Address the joint zoning ordinance requirements, as needed, to provide useable open space in residential developments that is suitable for active or passive recreation.
- 7. Consider trail connections between open space areas, recreation lands, and appropriate community facilities, local sidewalks and bicycle paths/lanes, and points of interest on a region-wide basis. Obtain access easements along the designated greenway/trail linkages network when possible as part of the subdivision and land development review process.
- 8. Consider designating locations for future public parks, playgrounds, and open space on an official map which provides a legal means for reserving such sites.

"Maintain the area's convenient and attractive commercial areas for the purchase of necessary goods and services, but prevent the overcommercialization of the area. Maintain and enhance the area's economic vitality, businesses and industries that provide jobs, convenient shopping and services, and quality of community life. Good land use planning can direct nonresidential development to areas where it makes sense. "

COMMERCIAL AND BUSINESS AREAS IN THE JOINTURE

Commercial areas in the Jointure are located in Newtown Township in the vicinity of Newtown Borough, near the Taylorsville-Washington Crossing area in Upper Makefield and in the vicinity of Anchor and Penns Park in Wrightstown Township. The various commercial areas indicated on the plan permit development consistent with the function (i.e. neighborhood or community commercial areas) for which they are intended in a manner consistent with the land use policies discussed in this plan. Commercial areas in the Jointure are not intended to function as regional commercial centers featuring sprawl or strip-mall forms of development, but as sub-regional community commercial areas where development is concentrated in town-center fashion to serve local customers and residents.

NEWTOWN BOROUGH

While Newtown Borough is not a part of the official joint Newtown planning program, its location at the geographic center of the Jointure has a significant impact on the nonresidential needs of the community. The Borough has often been referred to as the "hub" of the region and draws many of its customers from the surrounding areas within the Jointure. One of the economic development objectives of the *Comprehensive Plan for the Borough of Newtown* involves fostering a balance between businesses that serve the needs of borough residents and businesses whose customer base is more regional in nature.

The nonresidential districts in the borough have been developed with a variety of uses. Although there may be room on some of these properties for the expansion of the existing uses, there are no open larger parcels that would provide for substantial nonresidential development. Recent zoning changes enacted by the borough were geared toward providing suitable regulations for the different types of businesses found in various parts of the borough and did not significantly increase its nonresidential areas as a whole.

NEWTOWN TOWNSHIP

Newtown Township provides the commercial, office, and business core to the jointure outside of the borough.

The typical large lot area requirements associated with corporate headquarters, administrative offices and research facilities are provided for within Newtown Township near the 1-95 Interchange. A large

office-research area along Newtown-Yardley Road near I-95 provides area for the largest employers, including Lockheed-Martin, ICT, Holy Family College, and others.

Interim low intensity uses, such as various agricultural activities, are also permitted in this area by the zoning ordinance. Residential uses permitted by the zoning ordinance may also be appropriate in the portion of these areas north of the Newtown By-Pass and have been permitted to be developed. Residential uses should not be permitted in the office and research areas south of the By-Pass, which is designated for jobs and businesses.

The Newtown Business Commons has been restructured since the 1998 jointure plan to adjust to changing economic times and market needs. It now includes more business and office development, catering less to the industrial clients.

A series of zoning districts in Newtown provide for a range of commercial uses, from shopping centers to small local shops along Sycamore Street. The shopping centers along the Newtown bypass provide community-based retail uses that serve the jointure. Sycamore Street has been improved with sidewalks, lighting, land configuration, paving, and amenities. The former "Goodnoe's Corner" has been redeveloped with buildings closer to the road and design elements that make it consistent with a more Main Street-type look. The former Acme market site will be redeveloped to fit along the improved Sycamore Street.

UPPER MAKEFIELD TOWNSHIP

Washington Crossing—The village commercial district at Washington Crossing extends along Taylorsville Road and south along the Delaware Canal between Taylorsville Road and the canal.

The Gateway project undertaken by Upper Makefield is designed to foster improvements to this area, with pedestrian ways, design controls on commercial uses, and connections between the core neighborhood commercial uses and the historic sites. The township has received several grants for public improvements to the Gateway area.

WRIGHTSTOWN TOWNSHIP

Commercial Areas — Wrightstown Township's commercial zoning is located in Penns Park in the vicinity of the intersection of Second Street Pike (PA Route 232) and Penns Park Road and in Anchor north and south of the intersection of Second Street Pike and Durham Road (PA Route 413).

Professional Services District—The professional services/office district is located in Anchor east and west of the intersection of Second Street Pike and Durham Road, where a small shopping/office complex is located, along with two service stations.

Wrightstown—This village district allows single-family detached dwellings, limited commercial and office use. This district can be found in the village of Wrightstown along Durham Road.

Industrial Districts — The Rural Industrial District is intended for less intensive industrial uses in areas where public water and wastewater facilities are not provided. The RI-A District serves the same

purposes as the RI District and also provides appropriate locations for recycling and refuse facility uses.

Two rural industrial districts are found in Wrightstown Township. One is located southwest of Penns Park along both Second Street Pike and Penns Park Road. The other is located southwest of the intersection of Second Street Pike and Swamp Road. The RI-A District is located southwest of Penns Park along Penns Park Road.

Quarries —Four quarries are located in the southwestern portion of Wrightstown. Areas delineated in this plan for quarry activity recognize existing uses. Appropriate safety and setback requirements are intended to ensure these intensive uses are compatible with the residential and agricultural uses permitted in surrounding areas. Upon termination of quarry activities within each area, reclamation shall be undertaken and completed in a timely and appropriate manner in accordance with the Pennsylvania Surface Mining and Reclamation Act.

STRATEGIES AND ACTIONS

- 1. Allow commercial development in village neighborhood centers consistent with the character of existing village buildings in terms of use, scale, and appearance.
- 2. Review the joint zoning ordinance to ensure that commercial uses and mixed-use development, which include commercial uses, preserves the form and function of village areas and contributes to the preservation of historic structures.
- 3. Limit commercial activities to existing commercial centers, villages, and districts, including the Newtown Village shopping area, Sycamore Street, Washington Crossing Gateway, Penns Park, and Anchor and Wrightstown villages.
- 4. Maintain the existing commercial zoning district boundaries to reflect the intended future commercial land use pattern delineated in the comprehensive plan. No expansion of commercial districts is needed or proposed.
- 5. Support Sycamore Street area as a commercial and cultural center of the Jointure with its architectural diversity and history, and strengthen the area's economic stability and contribution to the Jointure through connectivity with the Borough and on-going Main Street programs.
- 6. Review municipal ordinances to promote use, streetscape, and design requirements consistent with Sycamore Street Plan and the town commercial districts in other appropriate commercial areas.
- 7. Promote pedestrian connections within and to all commercial areas.
- 8. Implement the plan for Washington Crossing Gateway.
- 9. Maintain the area in the vicinity of the present Newtown Business Commons as the most appropriate location for light industrial, office, and associated uses.

- Locate rural industrial uses not requiring public utilities in an area adjacent to the Penns Park neighborhood center and in a portion of land bounded by the Neshaminy Creek, Route 232, Swamp Road and the quarries in Wrightstown Township.
- Encourage corporate office and research use in the Office Research Area near the access to I-95 and the Newtown Bypass. This area will continue to serve as a major employment center, enhanced with open space and ancillary facilities that support office and job centers, such as hotels and conference facilities.
- 12. Ensure that buffer standards and setback requirements in the joint zoning ordinance protect properties adjoining commercial, industrial, business, and quarry uses.
- 13. Provide for the continued extraction of quarry material within the confines of the existing areas designated for quarry use.
- 14. Ensure that quarry operations are conducted in a manner that protects the health, safety and welfare of employees and residents of the community.
- 15. Ensure that adjoining properties and the region as a whole are protected from the visual and environmental impacts of quarry activities.
- 16. Work and coordinate with the PADEP, Bureau of District Mining Operations to ensure that quarry reclamation will be undertaken and completed in a timely and appropriate manner.

PRINCIPLE 8

PROTECT HISTORIC RESOURCES

"Ensure the preservation of the area's historic resources by regulating future growth to recognize, protect and incorporate landscapes, buildings and other structures of historic, architectural and cultural significance, as required by the Pennsylvania Municipalities Planning Code."

The historic buildings, structures, and sites found throughout the Newtown Area highlight the historical importance of this region and serve as a reminder of its past. They are an integral component of the fabric of the community and contribute to its character.

The goal of preserving history is supported by the results of the resident survey, where historic preservation ranked third, after farmland preservation and parks and open space, in the list of community elements that are most important. See Map 12, Historic and Cultural Resources.

Keeping these resources safe for the future, by protecting them from unnecessary demolition, neglect and intrusions from development, is a goal of this comprehensive plan, and the plan sets out strategies and action steps to advance preservation, falling into two main areas:

- **Identifying what we have and what's important: historic areas and resources** that the community values as worthy of preservation; and
- **Taking steps to protect what's important: Defining the roles and authority** of the community, landowners, and governments at all levels in assuring that important resources are protected.

IDENTIFYING IMPORTANT HISTORIC RESOURCES

NATIVE AMERICAN HERITAGE SITES

The Native American heritage of Bucks County traces its roots back 10,000 years, following the glacial period. The last of the Native American culture to inhabit the Delaware Valley was the Lenape. During William Penn's lifetime there were as many as 12,000 Lenape in the Delaware Valley in villages along the Delaware River and its tributaries. Almost all Native American archaeological sites from the Late Woodland Period (500–1500 A.D.) and the time of first contact with European settlers are found on river flats and slightly elevated areas of generally low ground. By the middle of the 18th century the Lenape no longer inhabited the region. Evidence of Native American settlements is periodically uncovered during the development process. If artifacts are found, the Pennsylvania Historial and Museum Commission will require developers to preserve found objects.

NATIONAL HISTORIC LANDMARKS: WASHINGTON CROSSING AND THE DELAWARE CANAL

The National Park Service describes National Historic Landmarks as resources that evoke the "common bond between all Americans" and "have meaning to all Americans." Less than 2,500 sites nationwide have been given this designation by the Park Service. Portions of two such sites are located within our area.

Washington Crossing and Washington Crossing State Park – Few events in American history are as famous as Washington crossing the Delaware. On December 25, 1776 George Washington and his army of 2,400 soldiers crossed the Delaware River and successfully attacked a Hessian garrison at Trenton, New Jersey. The victory revived American efforts to continue the Revolution after a series of defeats, including the loss of New York City, in the months prior to the battle. The site of the crossing is a National Historic Landmark. Washington Crossing State Park consists of approximately 500 acres, including many historic buildings and the Bowman's Hill Wildflower Preserve.



Delaware Canal and Delaware Canal State Park — The Delaware Canal is the only continuously intact canal that remains from the early- to mid-19th century when canal building was at its zenith. Canals played a critical role in transforming the United States from an agricultural to an industrial society. The Delaware Canal played an important role in transporting anthracite coal from the Upper Lehigh Valley to Philadelphia and other cities on the eastern seaboard. A portion of the canal runs through Upper Makefield Township.

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places is the "official list of cultural resources worthy of preservation" and "part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources." Historic sites in the Jointure include resources listed as historic districts and as historic properties.

Six historic districts are located either in part or in their entirety in the municipalities of the Jointure. Three of the six have been established as local historic districts, with local review of changes or demolitions.

Newtown Township Newtown Historic District

Upper Makefield Township Brownsburg Village Historic District Buckmanville Historic District Dolington Village Historic District

Wrightstown Township Penns Park Historic District Wycombe Village Historic District

Twenty properties are on the National Register of Historic Places. Newtown Township

- 1. David Leedom Farm
- 2. Newtown Creek Bridge
- 3. Newtown Presbyterian Church
- 4. Peter Taylor Farmstead
- 5. Twining Farm
- 6. George F. Tyler Mansion

Upper Makefield Township

- 7. John Burroughs Homestead
- 8. John Chapman House
- 9. Eagle Tavern
- 10. Hayhurst Farm
- 11. Keith House
- 12. Makefield Meeting
- 13. Smith Family Farmstead

Wrightstown Township

- 14. Penns Park General Store Complex
- 15. William Smith House
- 16. Vansant Farmhouse
- 17. Waldenmark
- 18. Isaiah Warner farmstead
- 19. Wrightstown Friends Meeting Complex
- 20. Gropius House

OTHER HISTORIC RESOURCES

Other resources have been identified and documented throughout the Jointure. Various sources and surveys exist to identify potentially valuable historic sites that have not received official federal or state recognition but are worthy of protection and preservation. The open space plans for each community, in particular the *Plan to Preserve Upper Makefield Township's Farmland and Open Space* (June 1998), provide some documentation of historic resources in each community. Other studies, such as the *Delaware Canal Master Plan* (July 1987), provide information for selected areas of the Jointure.

Jointure municipalities are engaged in developing comprehensive inventories of all resources in the community based on the information provided by the numerous studies, reports and listings that have been prepared in the past, and additional research to bring these inventories up to date to chronicle such resources. An up-to-date and complete listing will help direct the actions of the community to protect historic resources.

PROTECTING IMPORTANT HISTORIC RESOURCES

Protecting historic resources requires the use of a combination of approaches, from the national register to local zoning.

National Register of Historic Places — Listing on the National Register has no legal effect on the rights of property owners, unless proposed uses or alterations involve a federal license, permit, or funding from a federal source. Absent federal involvement through permits or funding, this designation provides no protection from alteration, redevelopment, or demolition of historic structures, unless there is some federal involvement in a proposed project. This program does, however, make grants available for properties deemed eligible for the Register or included within the boundaries of a historic district so designated. 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 Jointure will continue to support the efforts of residents and organizations that identify sites worthy of this designation and encourage them to apply for eligibility from the Pennsylvania Historical and Museum Commission. In order 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.

The area in which the resource is located and the Jointure as a whole receives recognition for having a historically important resource, and indirect benefits accrue to individual owners and to the community through increased property values, potential tourism and other economic development.

Historic Districts – Under Act 167 of 1961, the Pennsylvania 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. It calls for the establishment of a Historic Architectural Review Board (HARB) that advises the governing body as to whether to issue a Certificate of Appropriateness for construction and renovations in the historic district. The level of regulation which a municipality adopts under a historic district ordinance can vary from adopting provisions to control the demolition of historic buildings to governing the alteration, repair and maintenance of the external features of a historic structure that both require a building permit and are visible from the street.

To establish a new historic district, the PHMC must certify the historic significance of the district. Local governments must submit a Pennsylvania Historic Resource Survey Form, a copy of the historic district ordinance as approved by the local governing body and other documentation including a map and written description of the proposed district. A district must meet the eligibility requirements of the national register to be approved by PHMC for the state program of historic districts.

There are three existing historic districts in the jointure that have been approved by PHMC and that have established HARBs. There are three other areas that have already been listed on the National Register, but which have not been designated by the PHMC as Pennsylvania Historic Districts. These are the Village of Wycombe in Wrightstown and Buckingham; the Core Creek Historic District in Newtown Township; and the Wrightstown Historic District in Wrightstown Township.

The townships of the Jointure will consider creating additional historic districts for those villages that have already been listed on the National Register of Historic Places but are not recognized with local HARBs.

Certified Local Government – Local governments that establish historic districts are eligible to receive designation as a Certified Local Government from the PHMC under the provisions of the National Historic Preservation Act. Townships need to meet certain criteria, including continuing training in historic preservation by members of Historic Architectural Review Boards and historical commissions, efforts by the governing body to appoint HARB members with professional qualifications and historic preservation backgrounds, the submission of an annual report of the township's historic preservation efforts, and effective enforcement of the historic district ordinance. 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. Upper Makefield is a Certified Local Government.

Historic Marker Program — The Jointure can memorialize some of its historic sites and resources with a roadside marker through the Historical Marker Program of the PHMC. The PHMC maintains rules for eligibility, funding, and text on the marker. Local markers can also be made to mark landmarks.

Historic Preservation Zoning — The most powerful tool available to municipalities to encourage the protection of its history is through zoning. The Pennsylvania law encourages this by requiring local zoning ordinances to protect historic resources. The Planning Codes states in Section 603(g)(2) that zoning ordinances "shall provide for the protection of natural and historic features and resources." The Jointure townships plan to take the work done on identifying important resources and move toward protecting them.

STEPS TO ENCOURAGE HISTORIC PRESERVATION THROUGH ZONING

The emphasis in zoning ordinances is to <u>encourage</u> the protection and preservation of historic resources in several ways:

- requiring development in and around village centers to be consistent and compatible with existing layout, bulk, height, and design;
- allowing some flexibility and encouragement to preserve historic structures within a new development;
- providing additional use opportunities for historic structures.
- 1. Protect Villages Require new construction around villages and reconstruction within villages to keep prevailing setbacks, scale, style, and bulk. This would apply to area where buildings remain at crossroads villages, such as Washington Crossing, Penns Park, Brownsburg, Dolington, and Wycombe.
 - Require documentation prior to allowing for demolition of a building
 - Encourage new buildings to be constructed on the same footprint as the historic buildings and allow for more flexible setbacks.
 - Require new buildings to have same style, scale, architecture as the district.
- 2. Encourage the preservation of houses and barns on sites slated for development by allowing some flexibility so that the farmstead and outbuildings can be protected. Zoning ordinances should require that all historic resources, houses, barns, and outbuildings, be identified and described on subdivision submissions. Many times, a proposed subdivision will assume the removal of older buildings so that the developer can get a higher yield. If a subdivision or land development is proposed for the site of any structure identified on official township lists of historic resources, the lot lines of the proposed subdivision or land development can be drawn so as to preserve the historic context of the buildings, including outbuildings, with adequate setbacks. The township can encourage the preservation of historic resources and permit the alteration of lot sizes or setbacks to preserve the historic character of resource, without

increasing the overall permitted density. Adequate land areas and setbacks represent a site sufficient to protect the real estate values of the historic resource to the extent that investment in the restoration and continued maintenance can be ensured. Consideration can be given to exempting a preserved historic building from density calculations.

3. Allow Additional Use Opportunities — An approach that has been used in Bucks and Chester counties to encourage preservation of historic structures, such as large houses or barns, is to expand the uses that are available to identified historic buildings.

Buildings that have been identified and are designated by the municipality as historic resources are given additional use opportunities under the zoning ordinance. Typical uses are bed and breakfast, museums, or low-impact offices. This can be done under the authority of the Pennsylvania Municipalities Planning Code (Section 605 (2) (vi)), which allows for special classification and regulations of "places having unique historical, architectural or patriotic interest or value...." These zoning approaches must consider local conditions to protect neighborhood character.

The objective is to encourage the protection and preservation of landmarks that have historic or architectural interest by allowing them to be used for activities not otherwise permitted.

The *Newtown Area Joint Municipal Zoning Ordinance* includes some regulations geared toward protecting historic buildings and districts, but no extensive controls related to historic preservation. References are made to signs and some accessory uses in historic districts, as well as demolitions of historic structures. There is a continued effort to encourage the preservation of historic resources. The Jointure plan encourages action to promote the preservation of individual historic structures and the character of historic districts.

STRATEGIES AND ACTIONS

- 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 which are outside of the established historic districts.
- 4. Require all development plans to identify historic resources (properties and structures) on the development site and on surrounding properties.
- 5. Develop a comprehensive catalogue and database of all historic properties and structures on previously collected information and additional studies as necessary. Make this available to the public.
- 6. Conduct preservation efforts in the area of the Delaware Canal in accordance with the recommendations of the *Delaware Canal Master Plan* and continue efforts to enhance the Washington Crossing Gateway plan.

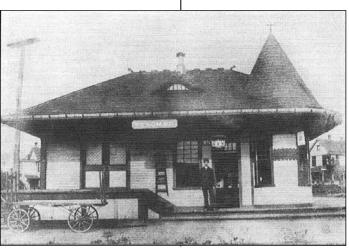
- 7. Ensure that the regulations governing the zoning districts in which historic resources are located promote the preservation of individual historic structures and the character of historic districts. Develop zoning standards that are designed to preserve historic villages, protect individual historic structures throughout the Jointure, and preserve the viewsheds of historic districts.
- 8. Review the joint municipal zoning ordinance and other municipal regulations to ensure that the Joint Municipal Zoning Ordinance and other municipal regulations promote appropriate restoration and reuse of historic resources. Encourage efforts of private property owners toward restoration and/or adaptive reuse of historic structures and sites by providing additional use opportunities as incentives for preservation.
- 9. Discourage the demolition of historically significant structures.
- 10. Work with the Pennsylvania Historical and Museum Commission to determine whether important Native American and other historic sites might be located in the Jointure and explore what measures can be taken to ensure that they are documented and, where possible, preserved.

PRINCIPLE 9

PRESERVE OUR VILLAGES

"Protect the scale and character of the villages through land use and design controls so that the historical and cultural heritage of these villages in the Jointure can enhance the quality of life in the present and be preserved for future generations."

There are still over one hundred identifiable villages remaining in Bucks County, but many others have been lost or overshadowed by growth and development. Historic villages are a unique resource, and once they are lost are irreplaceable. The villages within the Newtown Area represent an important part of the area's culture and heritage. The history of the area is manifested through these small settlements in many ways. Several villages like Wycombe, Brownsburg, and Dolington contain excellent examples of 18th and 19th century architecture. Villages along historic transportation routes, such as a railroad line, remain as evidence of early settlement patterns in Bucks County. The character and quality of the Newtown Area would be permanently diminished if small settlements were to disappear from the landscape, becoming unidentifiable as new development and growth engulfs the village image. While municipalities cannot prevent growth, they can alleviate the effects that development can have on villages through appropriate land use policies and regulations.



Wycombe Station, as it appeared in the early 1900s. (Source: *Historic Wycombe–A Late Victorian Village*, Mary Ann Sircely, Wrightstown Township Historical Commission, 1989.)

VILLAGE CLASSIFICATION

A village is generally viewed as a relatively small clustered settlement that is dominated by older homes and structures. Houses are spaced close together, evoking the image of the village as an identifiable place. Lots are typically small or narrow and structures have a pretwentieth century origin. The combination of historic structures with a distinctive development pattern creates village characteristics.

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

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

VILLAGES OF THE NEWTOWN AREA

The Newtown Area contains a variety of villages and hamlets. There are no longer any villages present in Newtown Township; however, within Upper Makefield and Wrightstown townships, there are a total of 12 residential and commercial villages and hamlets that are identified in the Bucks County Planning Commission publication, *The Villages of Bucks County – a Guidebook*.

THE VILLAGES OF UPPER MAKEFIELD TOWNSHIP

Brownsburg is a residential village that contains a well-preserved core of historic structures along River Road. The one large open space parcel (27.6 acres) is owned by Upper Makefield Township, and is intended to be protected in perpetuity. To the south of the village is an area zoned POS, Parks and Open Space District containing a 37.6 acre parcel owned by the township and preserved through the township open space program. The remaining areas surrounding the village are zoned Conservation Management.

Dolington is a residential village located along the border with Lower Makefield Township and is one of Bucks County's locally recognized historic districts. Dolington contains about twenty single-family houses. Only a couple of vacant lots remain in the village. Dolington is surrounded by the CM district in Upper Makefield Township and Residential Low Density District in Lower Makefield Township. Along the northern perimeter of the village on the west side of Dolington Road is the Dolington Tract, the site of the future National Veterans' Cemetery.

Washington Crossing/Taylorsville is a large commercial village located along River Road (S.R. 32), Taylorsville Road, and Washington Crossing Road (S.R. 532). Primarily commercial in the center and residential on the outskirts, there is a variety of stores, inns, shops, banks, and offices. New suburban development surrounds Taylorsville and traffic through the village is heavy. Taylorsville is zoned VR1 and VC1, Village Commercial-1 and contains a mix of residential and nonresidential uses. Most of the commercial uses are located along Taylorsville and Washington Crossing roads, classified as minor arterial and minor arterial/major collector roads, respectively. A major asset of the village is its proximity to Washington Crossing State Park, which is located along the northeastern perimeter of the village. Upper Makefield Township is working with all levels of government to coordinate the Gateway area to Washington Crossing, with road and streetscape improvements, and appropriate land use controls to enhance the place where George Washington crossed the Delaware River.

Buckmanville is a hamlet in the vicinity of Street and Lurgan roads containing only a few remaining structures. It is comprised of some dwelling units and accessory structures and the Jericho Valley Community Center. The hamlet is located entirely within the Conservation Management District. Areas surrounding the hamlet consist of rural residential and agricultural uses. There have been some large conventional houses constructed just east of the intersection of Street and Lurgan roads.

Woodhill is a hamlet located along Eagle Road in the vicinity of its intersection with Woodhill Road. Woodhill consists of a few buildings, including a few large stone houses and what appears to be a small white church converted to residential use. Some newer development is also taking place in the vicinity of Woodhill. The hamlet's hilltop location in the CM district provides the residents with a scenic view of the surrounding countryside. The surrounding area includes a rural mix of agricultural, rural residential, and vacant uses.

Jericho is a hamlet that is situated on the southeastern slope of Jericho Mountain along a scenic portion of Eagle Road. Located within the Jericho Mountain District, the boundaries of the hamlet are difficult to identify, but there are several old stone houses (and a few newer ones) which extend along Eagle Road. The area surrounding the hamlet includes agricultural and rural residential uses.

THE VILLAGES OF WRIGHTSTOWN TOWNSHIP

Penns Park is a commercial crossroads village that has the distinction of being listed on the National Register of Historic Places and is the oldest village in the Wrightstown Township. Penns Park is a sizable village consisting of residential and commercial uses. There are many older homes of both Colonial and Victorian architectural styles in the village. The village also houses a church, gift shop, tavern, offices, and restaurant. Penns Park is almost entirely surrounded by areas zoned either CR1, which is an area intended for higher density/intensity growth for the Jointure, or Rl, Rural Industrial, which permits single family detached and a wide range of nonresidential uses from commercial retail and office use to manufacturing. Over the years, conventional-style development that has been developed adjacent to the village and potential development on various vacant lot and rural residential lots may further threaten to dilute the historic character of Penns Park.

Pineville is a residential village that is located between Buckingham and Wrightstown townships and contains a mix of residential and commercial uses. Among the commercial enterprises found there are antique shops, a tavern, a greenhouse, and a restaurant. Durham Road (S.R. 413) that traverses the village is heavily traveled, but the center of the village is easy to identify by the post office and tavern, at the intersection of Township Line Road and Route 413. The village also contains several attractive houses, including some large Colonial stone houses. In Wrightstown Township, the village is zoned VR1 district. The area surrounding Pineville is zoned CM, Conservation Management District and is defined by the farmland and a large vacant parcel. In Buckingham, the village is zoned Village Center District. The Buckingham Valley Rehabilitation Center is located along Durham Road on the northwestern side of the village. The remaining lands adjacent to the village are rural residential or agricultural uses.

Rushland is located along Swamp Road and Mill Creek. The New Hope–Ivyland Rail line passes through the village. The railroad station has been converted to a shop. The village contains many businesses, including Davis feed mill, quarry, a Formica fabricator, a photographer, a post office, and several light manufacturing uses. The businesses seem to generate a considerable amount of traffic, particularly the quarry which has numerous heavy trucks coming to and from the site. The area located to the north and east of the village is zoned for quarrying. The western, eastern, and southern village boundaries are adjacent to the R2, Residential 2–High Density District, which is one of the areas intended for growth for the Jointure.

Wrightstown is located along a busy stretch of Durham Road (Route 413) near its intersection with Penns Park Road. The village has no distinct edges and is more commercial than residential in character. Wrightstown contains several old stone buildings. There are several commercial uses in and around the village, including a nursery, gift shops, restaurant, and store. Wrightstown is zoned Village Residential/Mixed Development and entirely built out with the exception of one rural residential property (14.8 acres). The remaining area adjacent to the village is zoned CM. The Wrightstown Friends Meeting House is located outside the designated village in the CM district.

Wycombe is one of the best preserved Victorian villages in Bucks County and, in 1985, was placed on the National Register of Historic Places. Straddling the Wrightstown and Buckingham township border, it may still be considered a residential village, although it has a traditional nonresidential component with uses such as a church, the Wycombe Inn, post office, and Histand's farm supply store. The village has characteristics of several settlement forms. It is elongated along Township Line Road and Mill Creek Road like a linear village. The village is centered near the train station and post

office at the junctions of the railroad, Forest Grove Road, Township Line Road, and Mill Creek Road like a nodal village and crossroads village.

In 2000, the Bucks County Planning Commission assisted the Jointure with a village study for Wycombe. The primary purpose of the study is to determine if current zoning regulations and district boundaries for the village are appropriate for the existing conditions, and if the regulations are conducive for maintaining and enhancing the characteristics of a village. The study presents detailed analysis and planning for the village that can form the basis for future actions of public officials and private citizens. (The summary of recommendations is listed in Selected Recommendations— Wycombe, below.)

Selected Recommendations—Wycombe

General

- Evaluate current village zoning regulations and district boundaries to determine if they are appropriate for the existing conditions.
- Evaluate the need for additional preservation and/or enhancement techniques such as village viewshed overlay district, village entrance enhancement, and village design guidelines.
- Assess whether the existing village zoning district designations are still appropriate for Anchor and Neshaminy Cliffs. For instance, there may be a need to add or delete certain permitted uses, or revise the area and dimensional requirements for the respective zoning districts.
- Consider implementing other village planning techniques such as the placement of easements, a transfer of development rights (TDR) program, an historic structure demolition permit ordinance, and a site analysis and resource conservation plan.

Parking Requirements

- Permit off-street parking requirements to be met on another site within 300 feet of a use.
- Require garages to be located to the rear of residential units.

Historic Aspects

• Explore interest in establishing a historic district ordinance pursuant to Act 167 of 1961.

Signs

• Amend sign regulations to address village districts by requiring smaller signs than are permitted in other districts in the townships.

Viewshed/Overlay Zoning and Adjacent Area

- Land adjacent to village should remain zoned for agricultural and residential use. Retain all permitted uses (conditional and special exception).
- Encourage use of cluster option by permitting cluster subdivisions by right and conventional subdivisions by conditional use. Make single-family detached a conditional use for existing tracts of more than 15 acres.
- Encourage subdivisions to be designed as an extension of the Village and its grid-patterned road layout.
- The relationship may be accomplished through a combination of building placement, open space configurations and provision of pedestrian access to the Village.
- Require the open space in cluster subdivisions that do not integrate village characteristics to be located adjacent to the village. This would form an "edge" for the village and strengthen its identity as a settlement distinct from the surrounding development.
- Establish a Transfer of Development Rights (TDR) program as an optional mechanism to retain open land adjacent to Wycombe.

Subdivision and Land Development Regulations

- Develop architectural design standards that promote development, redevelopment, and repair that are consistent with the historic resources.
- Require new development to install sidewalks.
- Reduce future right-of-way dimensions to not exceed 50 feet.
- Limit the number of driveways for any new development to one per lot, combine with adjacent driveway if feasible, locate driveway on secondary street if possible, and carefully locate driveway for optimal safety.

Public Improvements

- Develop a plan for the location of a path/sidewalk system.
- Consider traffic calming techniques on Forest Grove/Township Line Road.
- Truck traffic rerouting (with signage).
- Establish a street tree commission and plan for the maintenance of existing street trees and planting of new trees where necessary.
- Establish pedestrian-scale public spaces.
- Lay out future streets in a grid pattern, allowing several routes to any destination.
- Establish complex street corridors containing sidewalks, parking, trees, furniture, etc. and vehicular and pedestrian travel lanes.
- Create a greenway or link park along Mill Creek.

Chain Bridge is an almost indiscernible hamlet located just north of where Second Street Pike crosses the Neshaminy Creek. The Chain Bridge Octagonal Schoolhouse, owned by Wrightstown Township, was one of nine octagonal schools built in Bucks County between 1800 and 1840. The area is zoned CM, Conservation Management, and except for the schoolhouse and two other structures, the original settlement of Chain Bridge has disappeared.

The villages in the Newtown Area are each unique in their size, composition, and function. For planning purposes, they have been categorized based upon their composition and intended level of future growth. However, preservation and enhancement are an underlying principle for villages and hamlets in the Jointure, regardless of classification. The three primary categories are as follows: Growth Villages, Limited Growth Villages, and Hamlets.

GROWTH VILLAGES

These villages contain a village zoning district (VR1, VC1, VR4 Village Residential, and VC2 Village Commercial districts) and are intended to accommodate growth because they are located adjacent to areas zoned for higher density/intensity development. Growth Villages include Rushland, Penns Park, Wrightstown, and Taylorsville. The planning policy for these villages is to explore ways to preserve and enhance historic village character while accommodating future growth within and adjacent to the village. Permitted uses as well as area and dimensional regulations and other planning techniques should be examined to determine if they are still appropriate.

LIMITED GROWTH VILLAGES

These villages contain an associated village zoning district (VR1, VR4, VC1, VC2 districts) and are intended to accommodate modest infill development in the future. Limited Growth Villages include Brownsburg, Dolington, Wycombe, and Pineville. While these villages are not located adjacent to areas intended for higher density/intensity growth, there is still concern with incompatible development that may overshadow or undermine their historic character. The planning policy for these villages is to maintain the current village district boundaries and to examine any and all village

planning techniques (e.g., scenic overlay district, design guidelines, sidewalks) deemed necessary to preserve and enhance the village's historic character.

HAMLETS

Typically, these historic settlements are very limited in area and do not contain separate village zoning districts. Hamlets include Buckmanville, Jericho, Woodhill, and Chain Bridge. Based upon field surveys, the only perceived settlement pattern of these hamlets are a few dwellings and structures. These small settlements are particularly vulnerable to development of adjacent properties. The prescribed planning policy for a hamlet is to evaluate the feasibility of providing a village zoning district and/or overlay district to preserve or enhance the area in and around the hamlets. Development that is proposed adjacent to a hamlet should be encouraged to contain village-style form and architecture. To enhance the rural historic character, additional preservation measures may be appropriate.

VILLAGES ELEMENTS

Key factors necessary for successful village preservation and enhancement include: village entrances, village viewsheds, village district boundaries, and use and dimensional requirements. The following provides a summary of these key features.

VILLAGE ENTRANCE

The entrance to a village is a major element in strengthening the visual identity of the village. The entrance is the perceived edge of the village, a transition point that indicates the presence of a place that is different from its surroundings. A change in land use character or in the existing character of the landscape may be a signal to motorists that they are entering a village and need to reduce speed. Typically, villages have at least one of the following characteristics that can heighten the sense of entry to a village:

- Abrupt change of land use, such as the change from open agricultural land to a tight cluster of buildings in a village;
- Change of elevation, such as the crest of a hill or a dip in the road;
- Mature trees lining the street;
- Lot size and configuration, usually small, narrow lots often in a lineal arrangement;
- Architecture—buildings of a similar architectural period, located close to road;
- Village entrance signs.

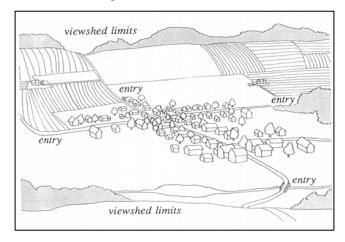
These factors would be an indicator of a change in land use or in the character of the land. Various design and planning techniques can be used to enhance or establish an effective entrance creating an increased awareness to motorists that they are entering a small community. This can be achieved through amenities such as landscaping, lighting, and pavement detailing. The village entrance is one means of identifying the limits of a village along its main thoroughfares. Based upon a field survey, it appears that the existing village district zoning boundaries are consistent with the perceived entrances to the villages.

VILLAGE VIEWSHEDS

The area immediately surrounding the village, known as the viewshed, is another important element to consider in preserving village identity. A viewshed begins at the transitional point where the built environment meets the surrounding landscape. Generally, the viewshed is determined by identifying those areas that can be seen from sites of significance in the village. The size of the viewshed varies with the topography, vegetation, and other structures or features of the village's surroundings. Because the viewshed serves as a transition between the countryside and the village, it is important to minimize or discourage development that will have a negative impact on this area. Alternative types of residential development, such as clustering, that function to preserve the open space of the viewshed should be considered in this area.

Integrating or separating new development within the viewshed can help protect the existing village character. To integrate development, zoning regulations (i.e. use and dimensional requirements) should be consistent with the original village character so that new development will function as an extension of the existing village. If new development is not compatible with the existing architectural style or character of the existing village, a physical separation should be provided between the proposed development and the village so that there is adequate transitional area in the form of an open space or buffer yard. The intent is to protect the viewshed by providing required open space adjacent to the village. The placement of new structures should be sensitive to both the village and the viewshed and located in the least obtrusive areas.

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



Village Viewsheds and Entrances

VILLAGE DISTRICT BOUNDARY

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

In the villages of Wycombe, Wrightstown, Taylorsville, and Brownsburg, the size of the village districts could potentially be reduced to correspond to the actual village entrances. Village preservation/enhancement techniques will afford greater protection from incompatible future development for these village resources and outlying areas.

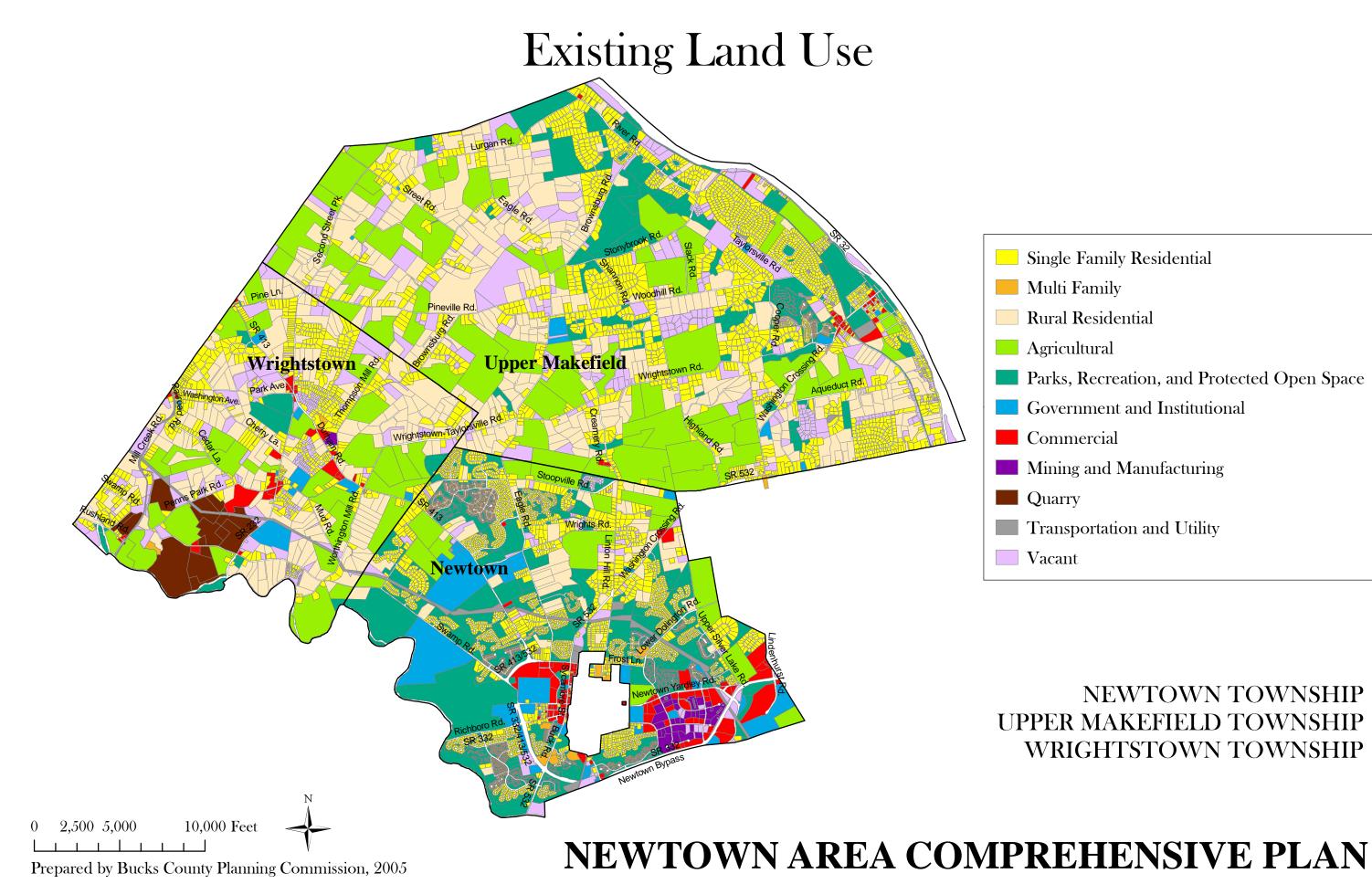
USE AND DIMENSIONAL REQUIREMENTS

Each of the four village zoning districts permits a range of residential and nonresidential uses. Generally, the residential village zoning districts are more restrictive than the village commercial districts in terms of permitted nonresidential uses. The VR1, Village Residential 1–Low Density permits only single family detached dwelling and limited nonresidential uses such as school, hospital, and child care facility. The VR4, Village Residential/Mixed Development, and the VC1 and VC2 Village Commercial districts allow for a wider range of both residential and nonresidential uses, but the permitted uses and area and dimensional requirements may vary slightly between districts.

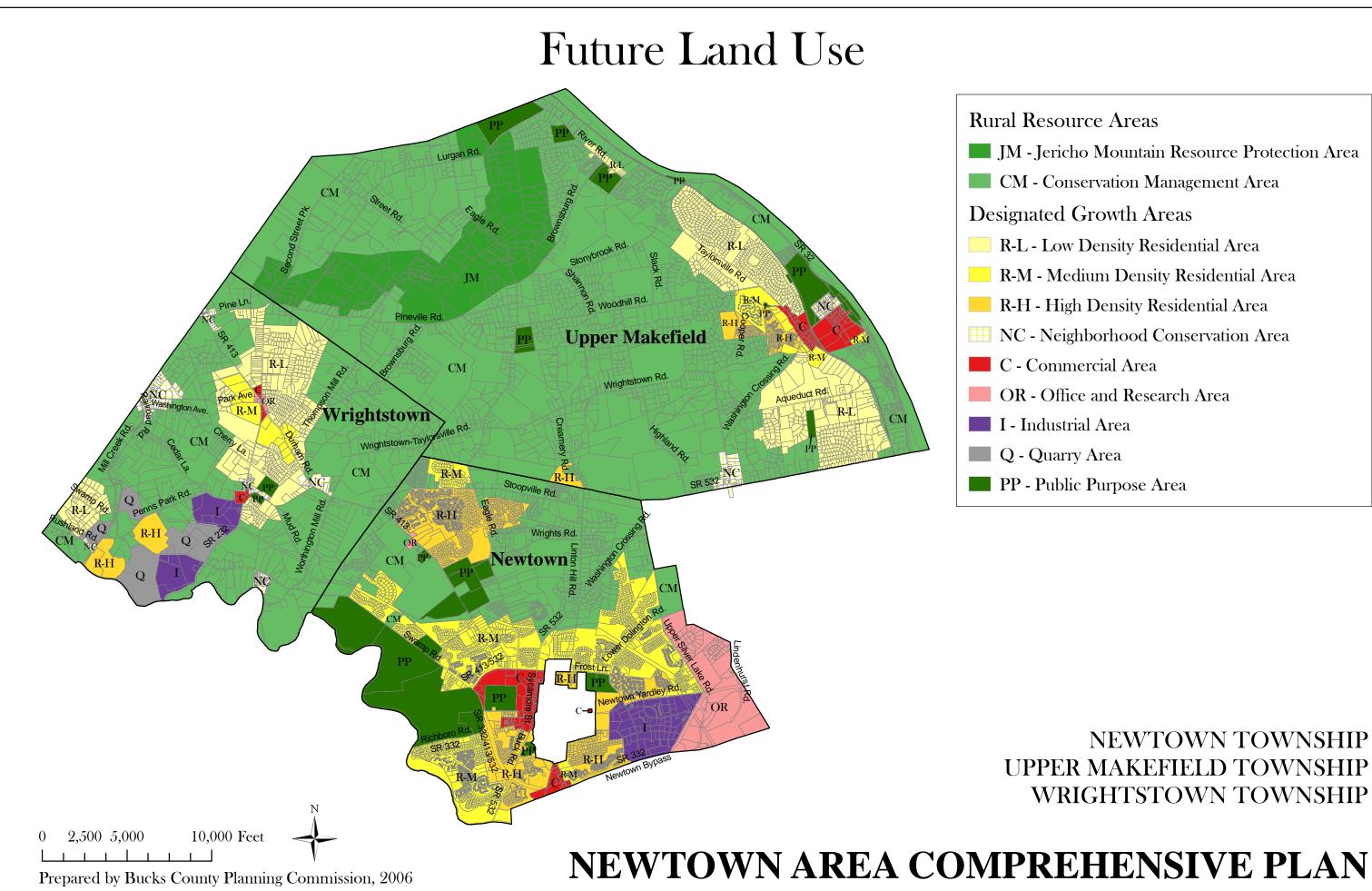
If the mass, scale, or nature of proposed buildings and/or uses are not compatible with those of the existing building and uses in a village, they may undermine the historic character and quality of a village. If this is the case, municipal officials may wish to eliminate those uses from the village zoning district. Conversely, adding new use(s) that encourage village-oriented development featuring compact, pedestrian-oriented, mixed-use communities should be examined and implemented where appropriate. An evaluation of the new and proposed development activity in and around the villages may prompt municipal officials to revise certain use and dimensional requirements. Integrating these elements along with the provision of public open space can help to create a sense of community and provide an opportunity for social interaction among residents. Design guidelines could be used to help guide the design and layout of proposed developments to be compatible with the prevailing village characteristics.

STRATEGIES AND ACTIONS

- Evaluate current village zoning regulations (VC and VR) to determine if revisions should be made to use and dimensional requirements and if setbacks, design elements, or zoning techniques should be modified. Evaluate the village zoning district boundaries to determine if they are appropriate for the existing conditions and revise if necessary.
- 2. Work with adjacent municipalities on preservation and consistent standards for Wycombe and Dolington.
- 3. Ensure the road system serves to improve rather than diminish the quality of life in the villages through traffic calming, signs, and street design.
- 4. Promote public and private improvements, such as pedestrian ways, parking areas, landscaping and signs that improve the villages.
- 5. Consider village viewshed overlay zoning regulations.

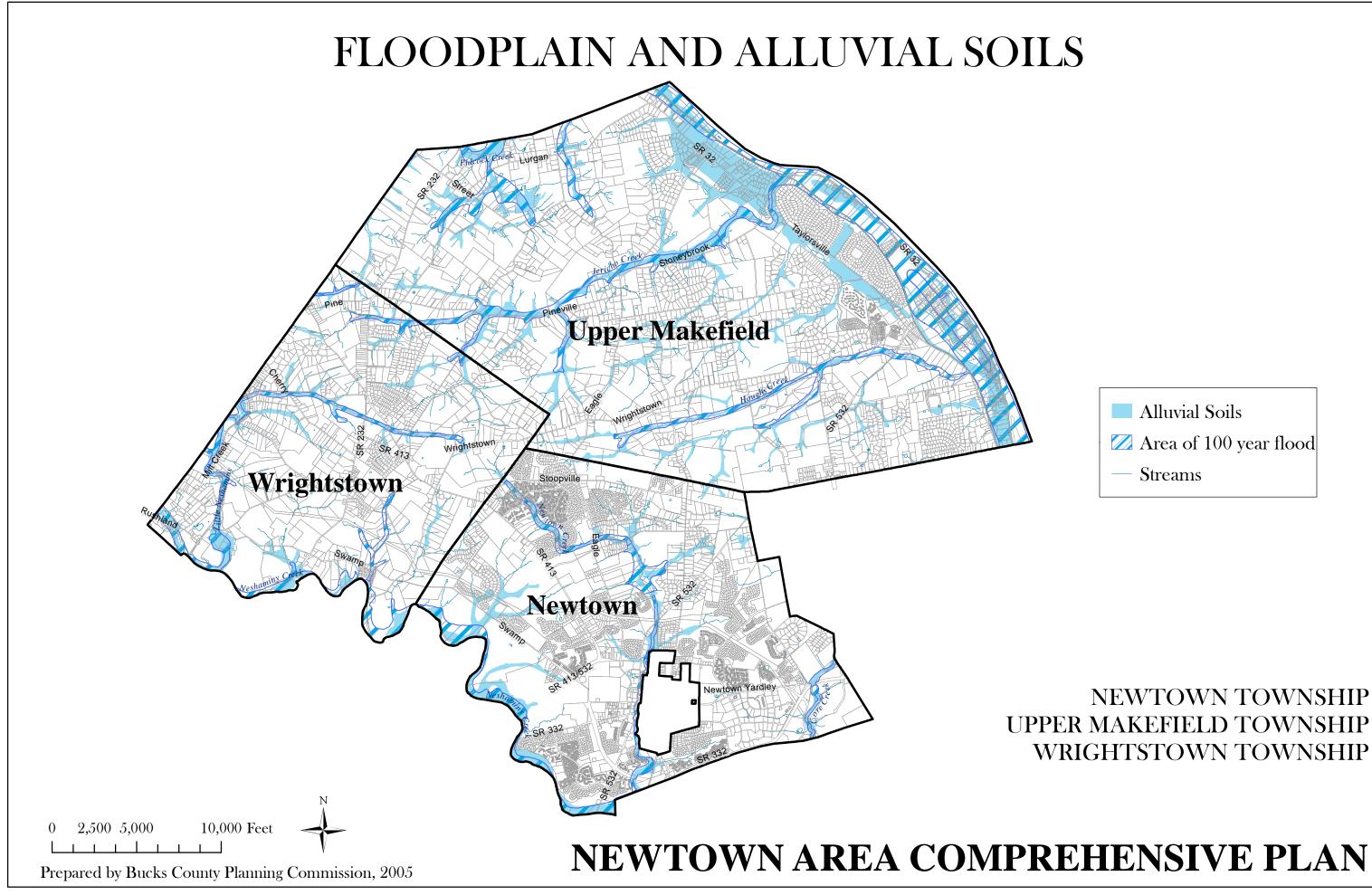


Single Family Residential Multi Family **R**ural **R**esidential Agricultural Parks, Recreation, and Protected Open Space Government and Institutional Commercial Mining and Manufacturing **Transportation and Utility**

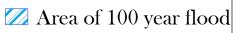


Rural Resource Areas JM - Jericho Mountain Resource Protection Area CM - Conservation Management Area Designated Growth Areas R-L - Low Density Residential Area **R-M** - Medium Density Residential Area R-H - High Density Residential Area III NC - Neighborhood Conservation Area C - Commercial Area **OR - Office and Research Area** Q - Quarry Area 📕 PP - Public Purpose Area

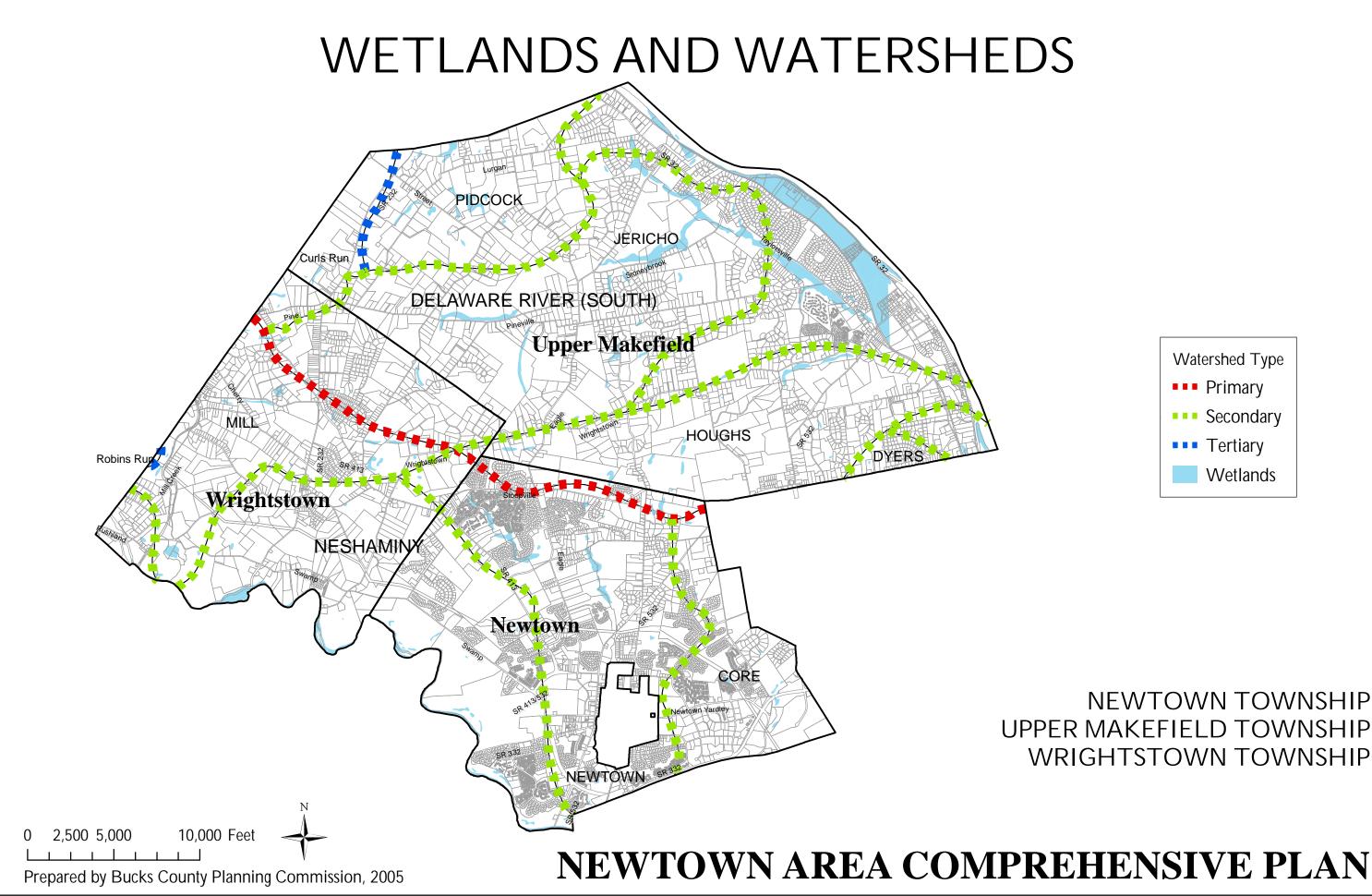
NEWTOWN TOWNSHIP UPPER MAKEFIELD TOWNSHIP WRIGHTSTOWN TOWNSHIP

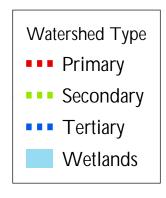


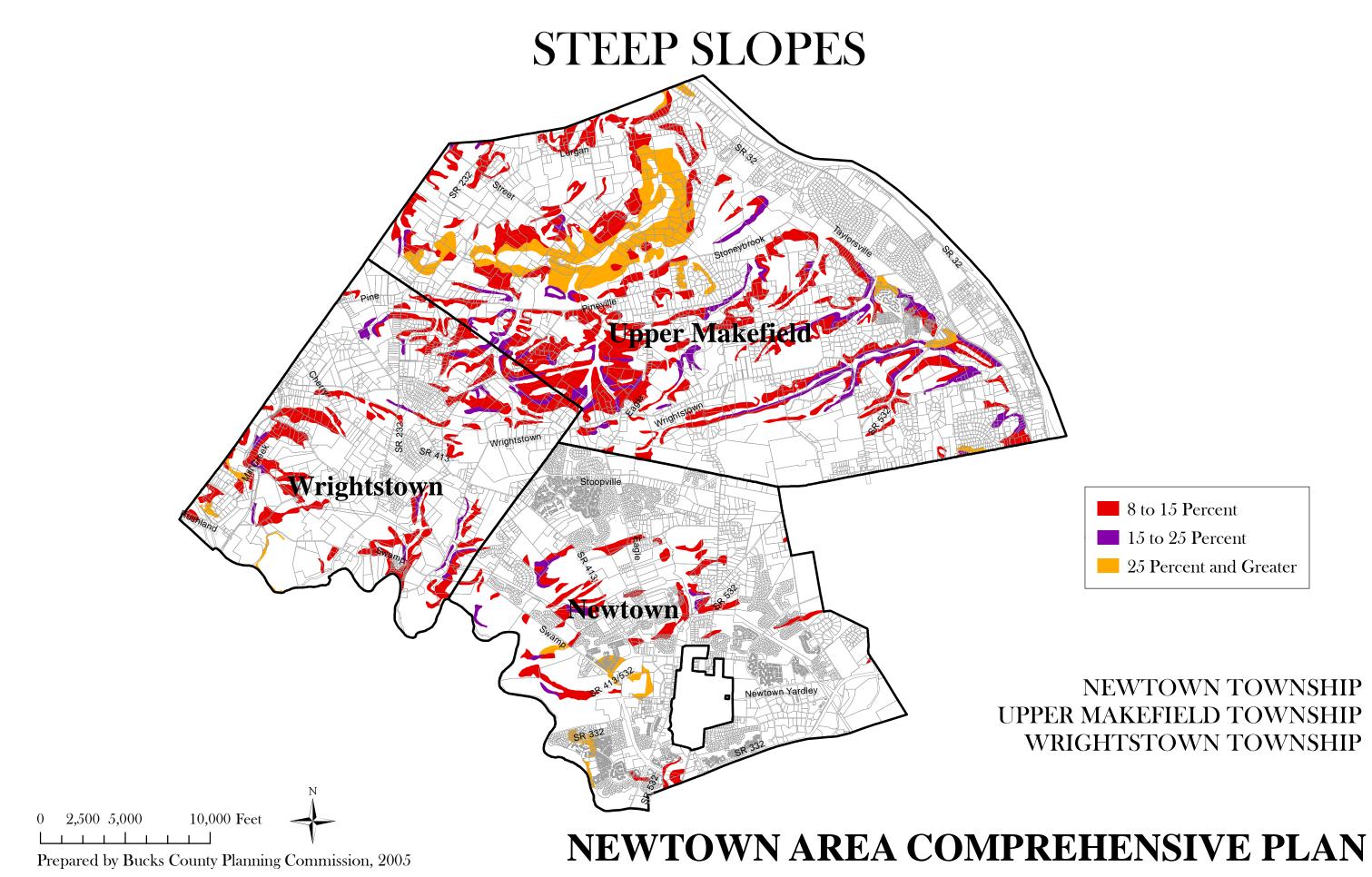
Streams



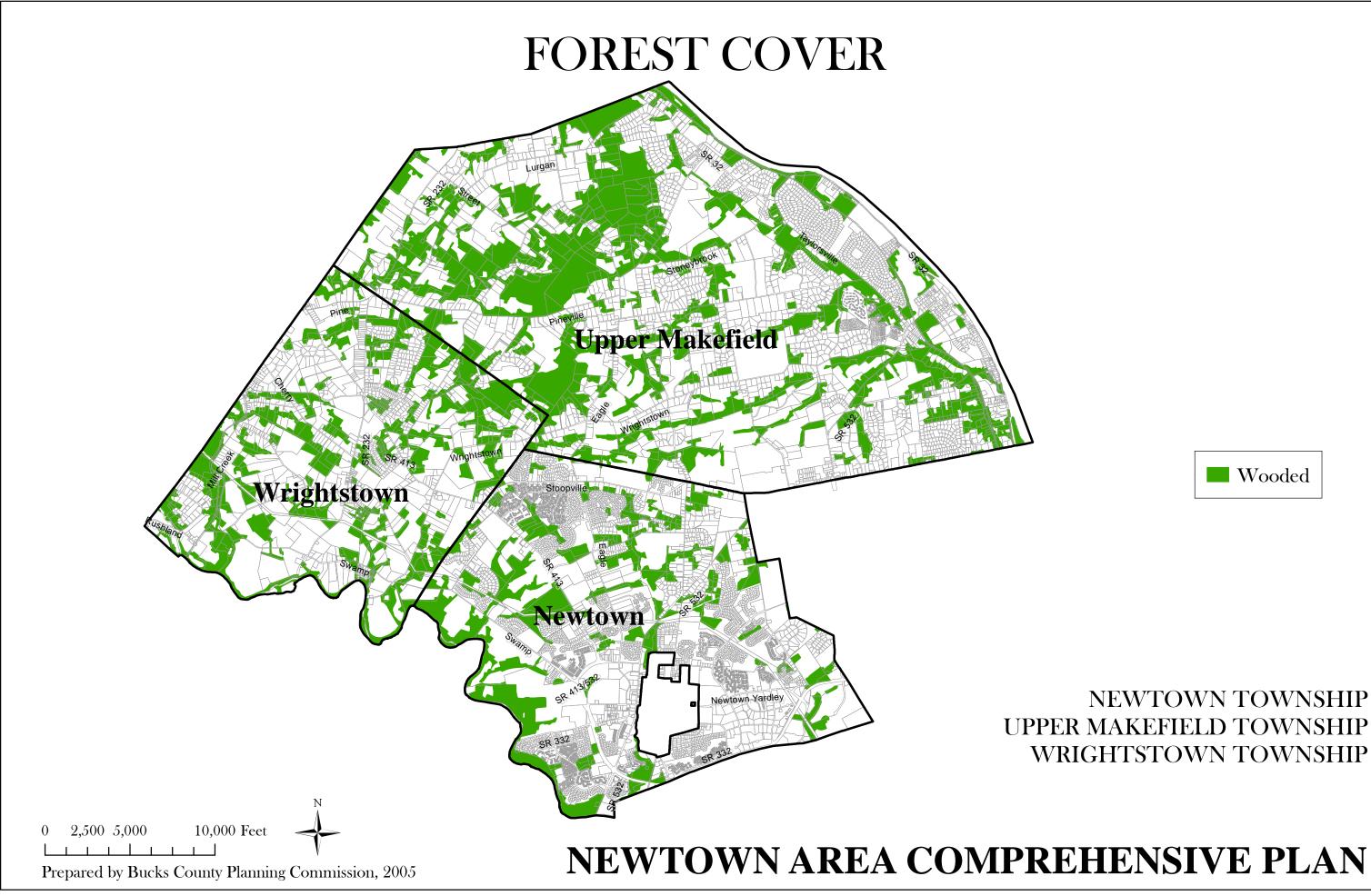
Alluvial Soils



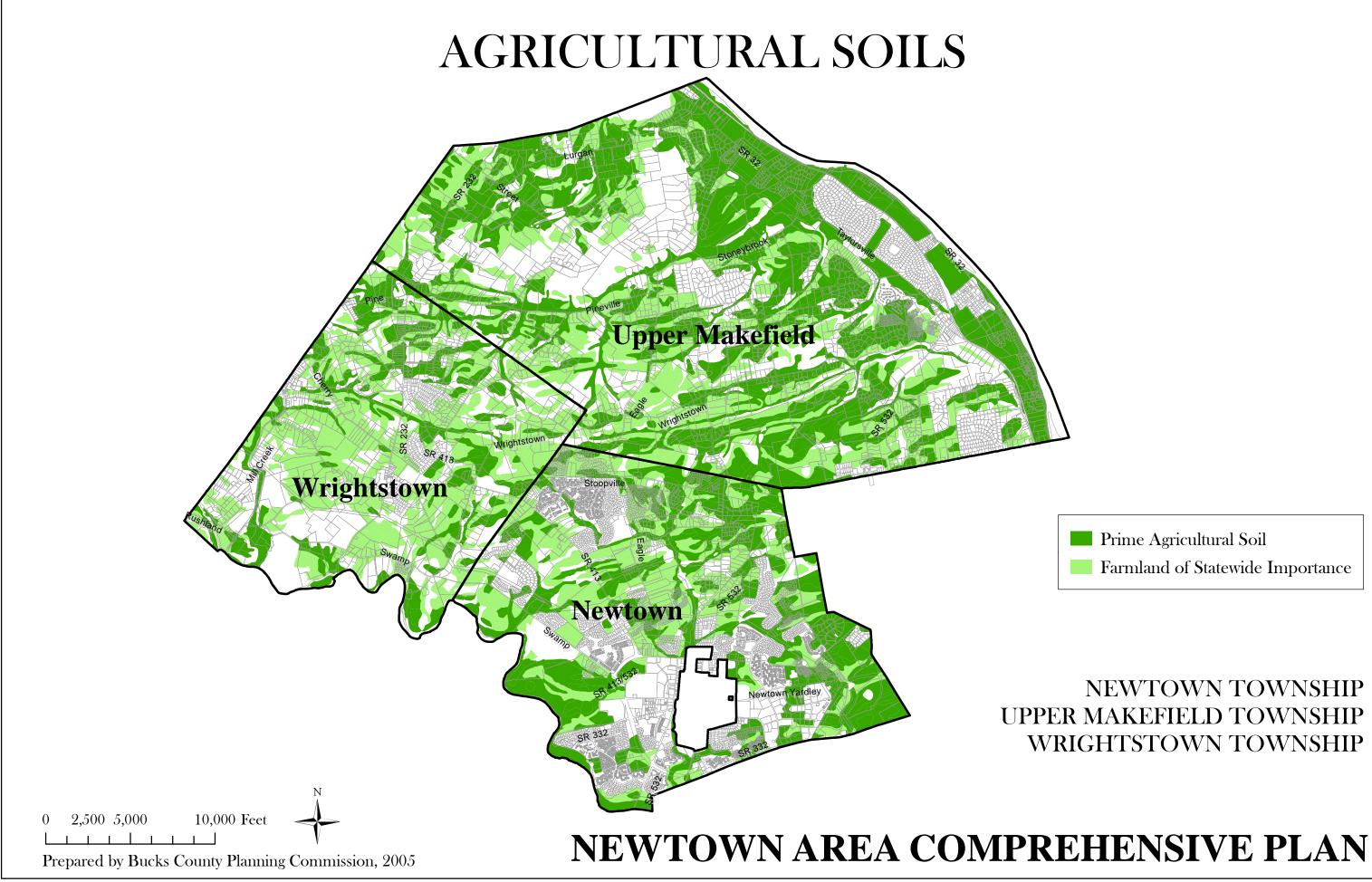




8 to 15 Percent 15 to 25 Percent **25** Percent and Greater



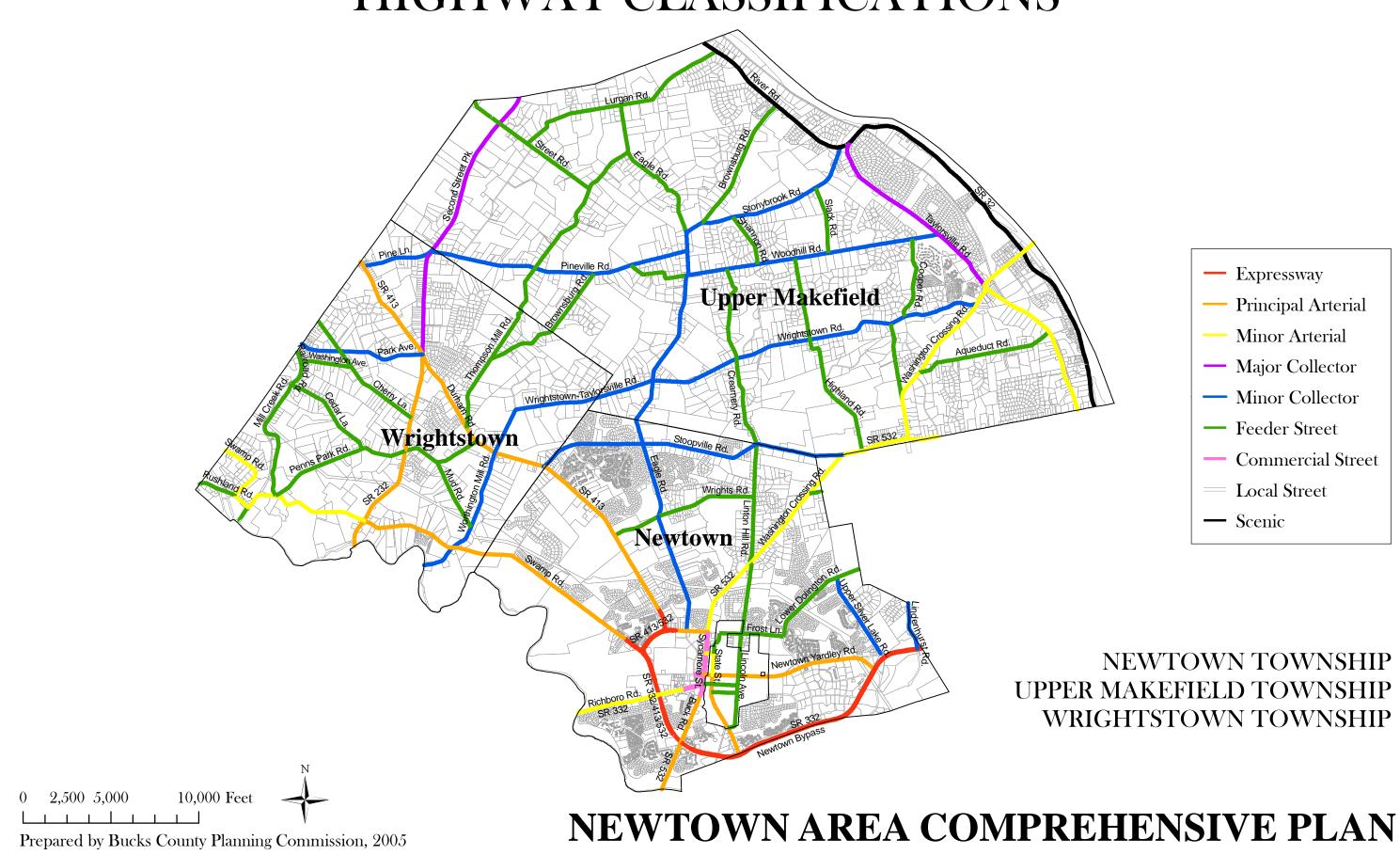
Wooded



Prime Agricultural Soil Farmland of Statewide Importance



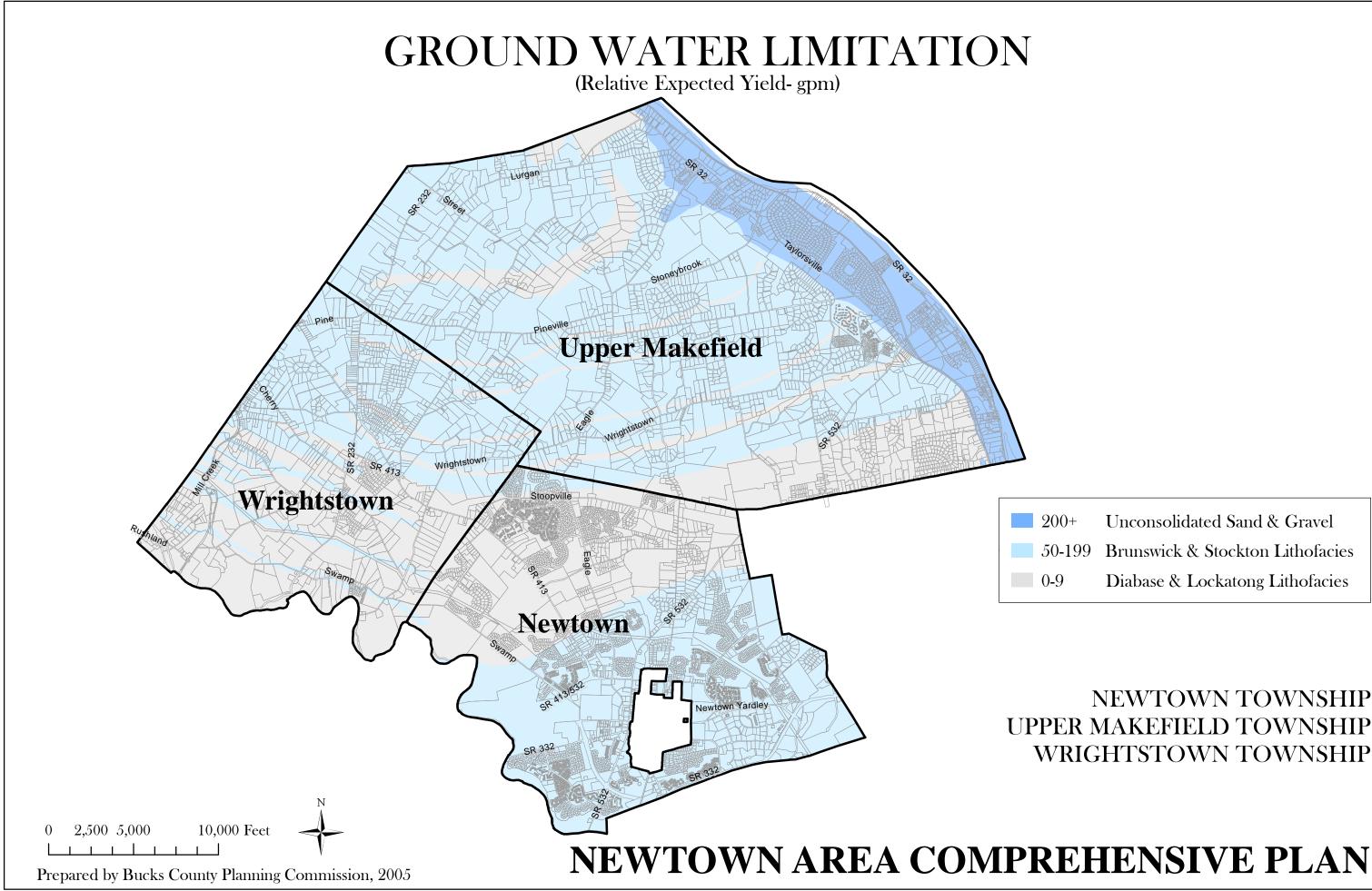
HIGHWAY CLASSIFICATIONS



NEWTOWN TOWNSHIP UPPER MAKEFIELD TOWNSHIP WRIGHTSTOWN TOWNSHIP

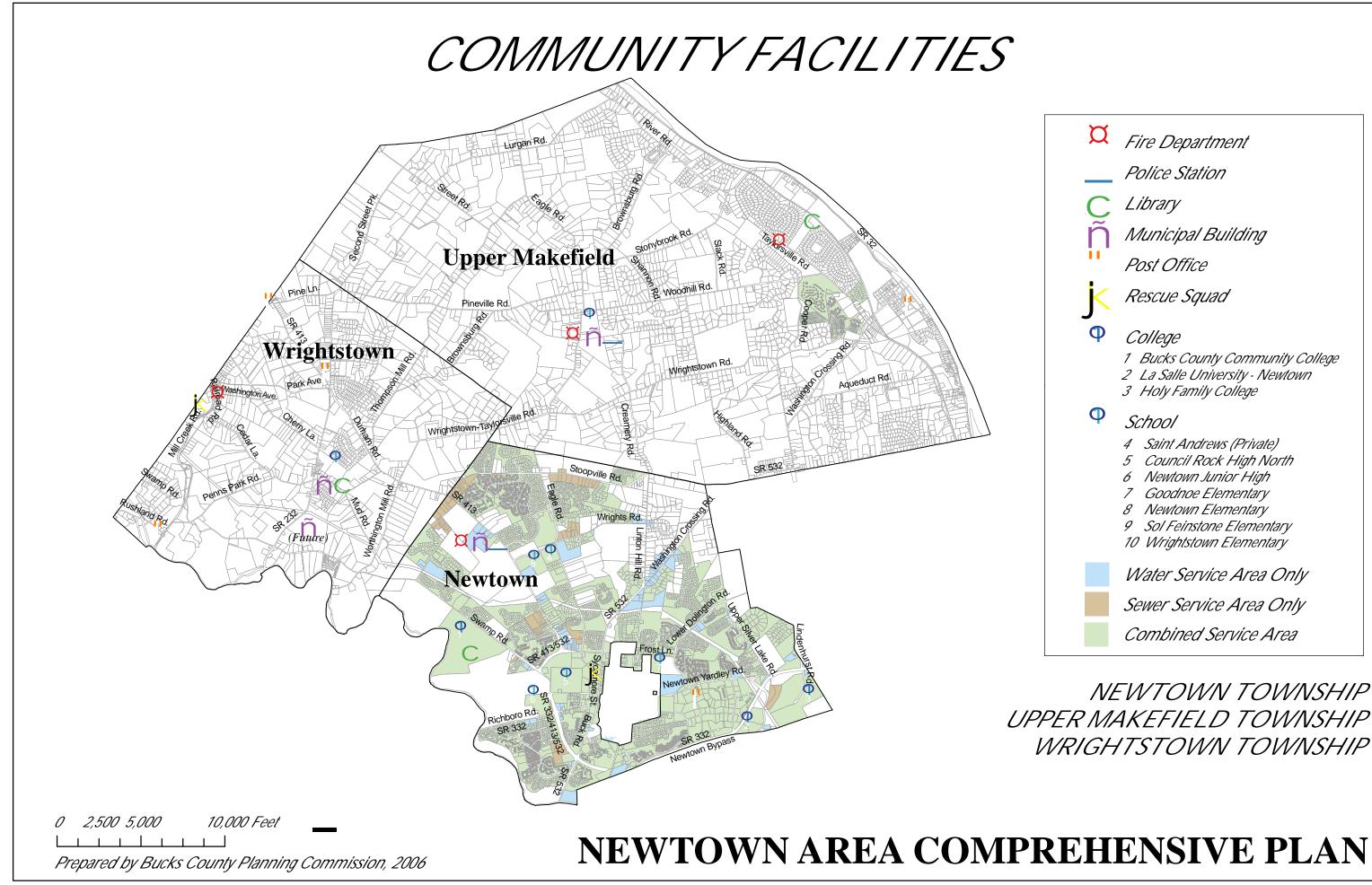


- Principal Arterial



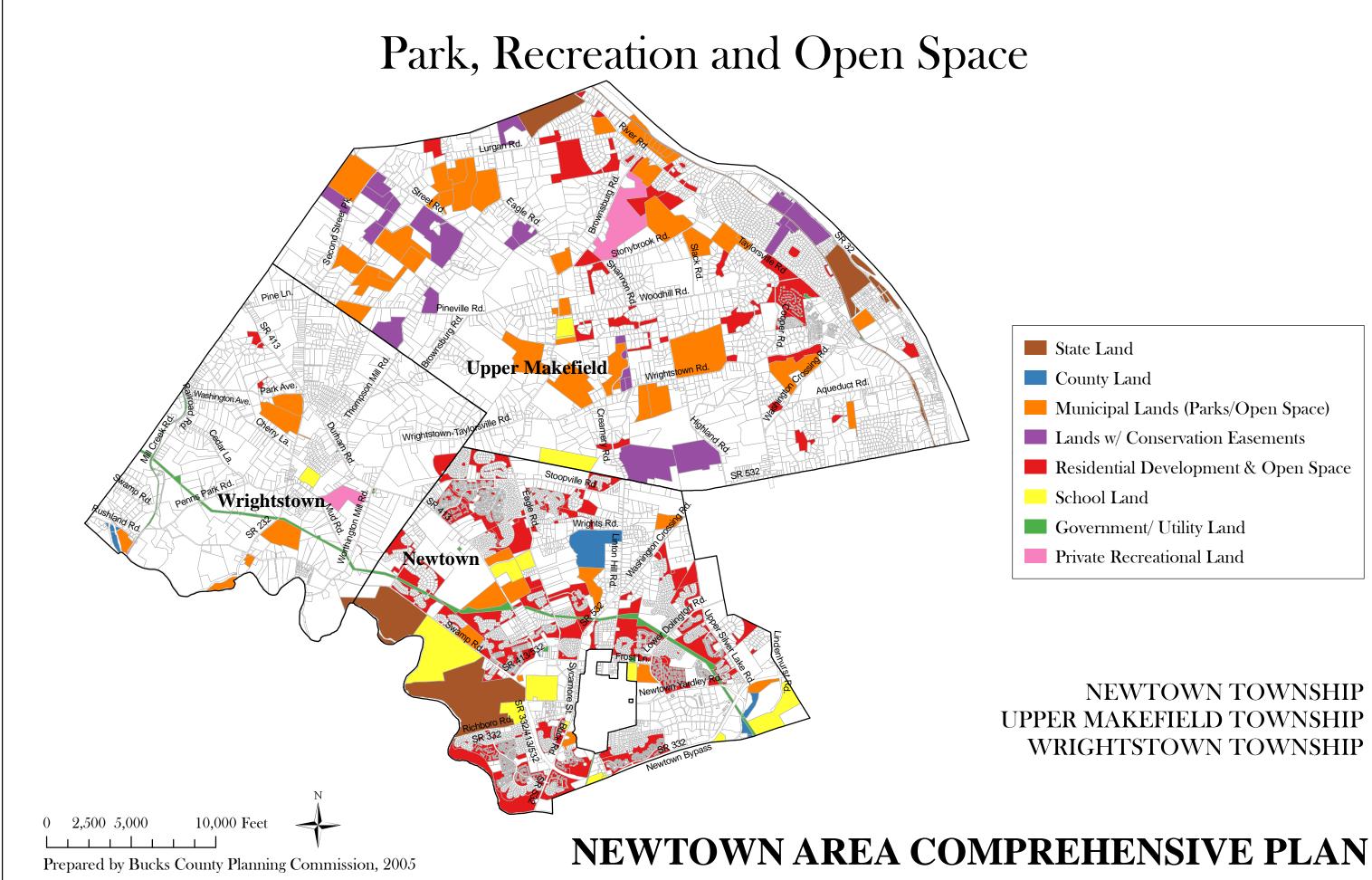
NEWTOWN TOWNSHIP UPPER MAKEFIELD TOWNSHIP WRIGHTSTOWN TOWNSHIP

|)()+ | Unconsolidated Sand & Gravel |
|-------|----------------------------------|
|)-199 | Brunswick & Stockton Lithofacies |
| 9 | Diabase & Lockatong Lithofacies |



Ø Fire Department Police Station Library Municipal Building Post Office Rescue Squad Φ College 1 Bucks County Community College 2 La Salle University - Newtown 3 Holy Family College School 4 Saint Andrews (Private) 5 Council Rock High North 6 Newtown Junior High 7 Goodnoe Elementary 8 Newtown Elementary 9 Sol Feinstone Elementary 10 Wrightstown Elementary Water Service Area Only Sewer Service Area Only Combined Service Area

NEWTOWN TOWNSHIP UPPER MAKEFIELD TOWNSHIP WRIGHTSTOWN TOWNSHIP



NEWTOWN TOWNSHIP **UPPER MAKEFIELD TOWNSHIP** WRIGHTSTOWN TOWNSHIP

Private Recreational Land

Government/ Utility Land

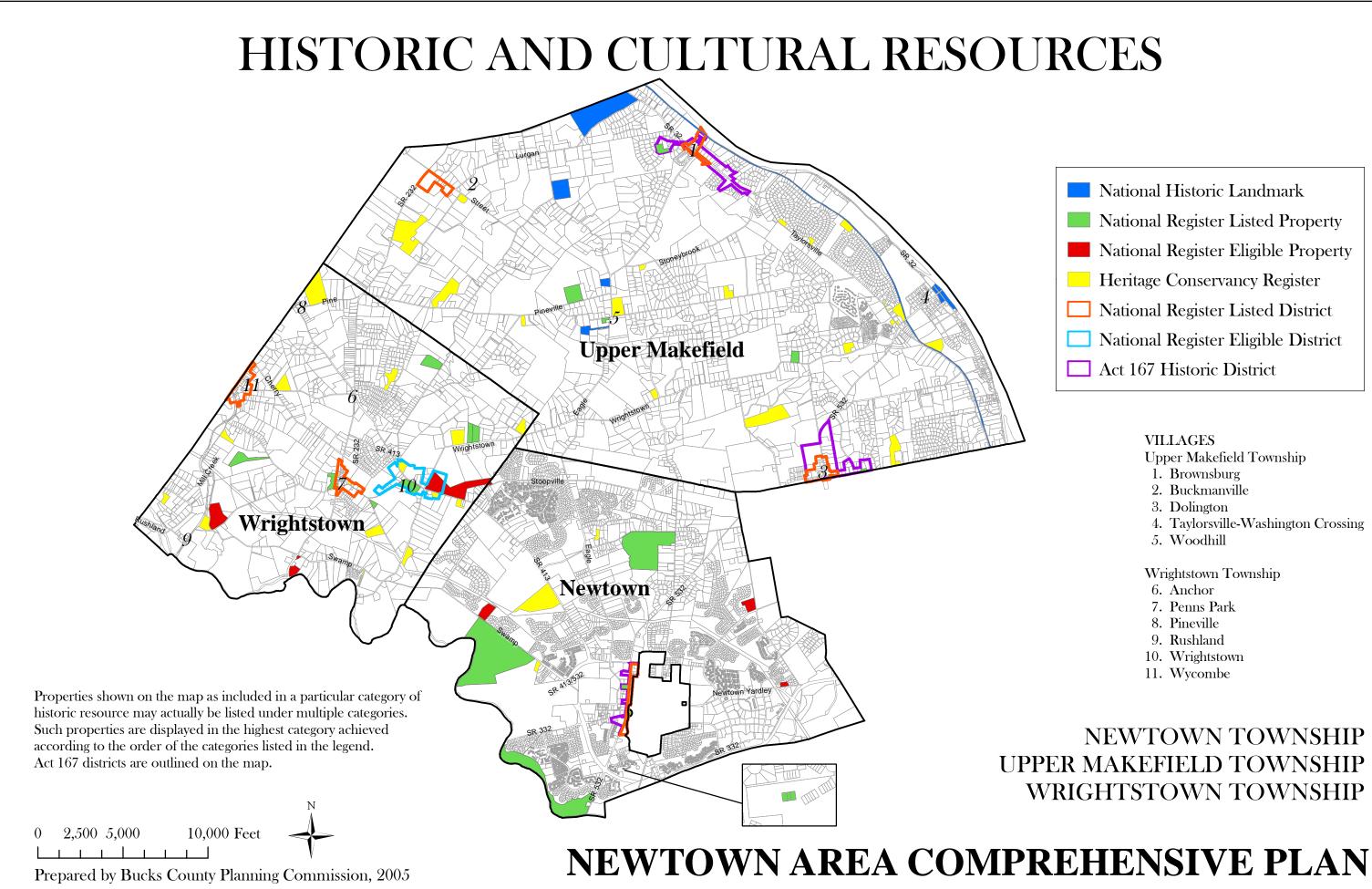
School Land

Residential Development & Open Space

Lands w/ Conservation Easements

Municipal Lands (Parks/Open Space)

County Land



- National Historic Landmark National Register Listed Property
- National Register Eligible Property
- Heritage Conservancy Register
- □ National Register Listed District
- **National Register Eligible District**
- Act 167 Historic District

VILLAGES

Upper Makefield Township

- 1. Brownsburg
- 2. Buckmanville
- 3. Dolington
- 4. Taylorsville-Washington Crossing
- 5. Woodhill

Wrightstown Township

- 6. Anchor
- 7. Penns Park
- 8. Pineville
- 9. Rushland
- 10. Wrightstown
- 11. Wycombe

NEWTOWN TOWNSHIP **UPPER MAKEFIELD TOWNSHIP** WRIGHTSTOWN TOWNSHIP

NEWTOWN AREA JOINT COMPREHENSIVE PLAN

Bucks County, Pennsylvania



APPENDICES



STRATEGIES AND ACTIONS PLAN SUMMARY CHART

Newtown Area Joint Comprehensive Plan Strategies and Action Plan Summary Chart

PRINCIPLE 1 **PROMOTE SMART GROWTH** Guide new growth into development districts and guide the form of new development to create good places to live that are respectful of neighbors and to the community and that adhere to the principles of the Jointure. Accommodate anticipated growth in defined development districts in all three Jointure townships to meet the area's obligations to provide for new residents in a variety of housing choices. Funding or Technical Entity Responsible Assistance **Recommended Strategies and Actions** 1 Promote a land use pattern which recognizes and preserves the agricultural, Joint Zoning Council, Boards of historic, cultural and natural features which makes the area unique. Supervisors, Joint Planning Commission, Municipal Planning Commissions Provide areas sufficient to accommodate the anticipated growth for a variety Joint Zoning Council, Boards of 2. of housing types and densities for the 2005 to 2015 period by maintaining Supervisors, Joint Planning Commission, Municipal Planning current land use regulations. Commissions Conduct a review of the comprehensive plan after the 2010 Census data Joint Zoning Council, Boards of CDBG, BCOCBD, 3. become available to ensure that data, policies and recommended actions Supervisors, Joint Planning LUPTAP, DCED continue to reflect conditions in the Jointure and to advance the community Commission, Municipal Planning Commissions vision of its residents. 4 Direct residential and nonresidential development into Development Areas in Joint Zoning Council, Boards of all three jointure townships where supportive services and facilities exist or Supervisors, Joint Planning Commission, Municipal Planning can be economically and efficiently provided to prevent sprawl and inefficient development patterns. Commissions Maintain the boundaries of the existing zoning districts of the Newtown Area Joint Zoning Council, Boards of 5. Joint Municipal Zoning Ordinance. Supervisors, Joint Planning Commission, Municipal Planning Commissions Evaluate all zoning changes requests in light of the Comprehensive Plan Joint Zoning Council. Boards of 6. policies so that changes are consistent with the Plan. Supervisors, Joint Planning Commission, Municipal Planning Commissions 7. Continue and advance efforts to permanently preserve open space and Joint Zoning Council, Boards of farmland. Supervisors, Joint Planning Commission, Municipal Planning Commissions

PRINCIPLE 2 PROMOTE SUSTAINABLE DEVELOPMENT AND PROTECT NATURAL RESOURCES

Development will be accommodated in a way that protects the land, area, and water for present and future generations. Policies to protect the landscape, vegetation, natural topography, farmland resources, wetlands, and floodplains that have been part of the Jointure standards for three decades will be continued. Updates to these policies to address flooding problems, site disturbance, water quality degradation, loss of tree cover, and energy conservation are recommended, in accordance with the mandates of the Pennsylvania Municipalities Planning Code.

| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance |
|-----|---|---|---------------------------------------|
| 1. | Recognize that the protection of natural resources has direct effects on the health, welfare and safety of the community. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 2. | Provide for the protection of critical natural resources including watersheds, groundwater, floodplains, floodplain soils, wetlands, prime agricultural soils, steep slopes, woodlands and stream corridors, and protection from hazards due to areas of hazardous geologic and topographic features. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 3. | Recognize and protect open land, farms and farmland as valuable resources for current and future generations. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 4. | Protect sensitive natural resource areas to ensure adequate habitat for threatened and endangered plants and animals. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 5. | Ensure that the permitted intensity of development reflects the suitability of particular landscapes to accommodate disruption without affecting natural cycles within and beyond sites where development is proposed. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 6. | Enforce the natural resource and agricultural soils protection standards in the joint municipal zoning ordinance. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 7. | Amend the joint zoning ordinance to reflect floodplain soils found in the new Natural Resource Conservation Service soil classification scheme. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 8. | Revise zoning standards for wetland buffers and 8 to 15 percent slopes to adequately protect these resources. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | PADEP Growing Greener |
| 9. | Establish a policy of "no net loss of tree canopy" through tree protection and tree replacement. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 10. | Supplement existing woodlands protection requirements in the joint zoning ordinance by requiring additional tree planting in appropriate environmentally sensitive areas and a mix of native plants as the preferred planting scheme for required landscaping. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |

| 11. | that | ise municipal subdivision and land development ordinances to require subdivision and land development plans show priority sites designated in <i>Natural Areas Inventory of Bucks County, Pennsylvania</i> . | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
|-----|------|---|---|---|
| 12. | | the provisions of the Municipalities Planning Code to require energy servation in new development. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 13. | and | uire the use of Low Impact Development techniques (e.g., site analysis resource conservation plans) that respect a site's natural topography drainage system while minimizing grading and site disturbance. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 14. | Sup | port recycling and reduction of solid waste. | Joint Zoning Council, Boards of Supervisors | Section 902 of Act 101 Grant, Recycling Technical Assistance grant, PADEP |
| 15. | was | sider the use and protection of all water resources: groundwater, tewater, and storm water to ensure a safe and reliable water supply and d water quality in streams. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 16. | Wat | er Resources Protection: | | |
| | a. | Insure an adequate supply of potable water to meet the needs of the region and to ensure adequate quantity and quality of municipal water systems. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions, Municipal Environmental Advisory Councils, Newtown Artesian Water Company | LUPTAP, CDBG, DCED, BCOCBD, BCPC |
| | b. | Explore opportunities for all three townships to work together to encourage water conservation in the Jointure. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | Growing Greener, WREN, PADEP, BCPC |
| | C. | Review current zoning regulations to ensure that they adequately protect critical areas of groundwater recharge. The pattern and intensity of development should be carefully controlled in order to prevent the depletion of the groundwater resources. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions, Municipal Environmental Advisory Councils, Newtown Artesian Water Company | LUPTAP, CDBG, DCED, BCOCBD, BCPC |
| | d. | Continue township-level requirements for hydrologic studies to ensure protection of water resources. Studies should continue to address the environmental effects of removing large quantities of groundwater (versus the use of surface water), a determination of the maximum rates of groundwater withdrawal (versus groundwater recharge), and an identification of critical recharge areas within the region. | Joint Zoning Council, Joint Planning Commission, Newtown Artesian Water Company | Growing Greener, PADEP, BCPC, LUPTAP, DCED |
| | e. | Establish regulations for wellhead protection zones. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions, Municipal Environmental Advisory Councils, Newtown Artesian Water Company | Growing Greener, PADEP, BCPC, LUPTAP, DCED |
| 17. | Was | stewater | | |
| | a. | Update the wastewater facility plans for the jointure municipalities and make sure that wastewater policies are consistent with land use policies. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Bucks County Water and Sewer Authority, Newtown Bucks County Joint Municipal Authority | Act 537 Sewage Facilities Planning grants, PADEP |
| | | | | |

| | b. | Require detailed wastewater facilities alternatives for proposed extensions of sewer service outside the delineated Development Area. Such analyses should include the evaluation of community systems and the impact of providing sewer service on the available capacity intended for the Development Area. | Boards of Supervisors | |
|-----|------|---|---|--|
| | C. | Consider the long-term impacts of community wastewater systems and their management. | Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| | d. | Adopt ordinances which address operation and maintenance requirements and design requirements of individual alternative systems (e.g., spray irrigation or stream discharge systems) supplemental to PADEP and BCDH regulations. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD, PADEP BCDH |
| 18. | Sto | rmwater | | |
| | a. | Continue to enforce the recommendations of the Delaware River South and Neshaminy Creek stormwater management plans. | Boards of Supervisors | Act 167 funding, PADEP, BCPC |
| | b. | Encourage retrofits of existing stormwater management facilities to meet current standards for volume control and water quality improvement. | Boards of Supervisors | PADEP, Growing Greener, PENNVEST, CZM grants, PADEP, DVRPC |
| | C. | Ensure that maintenance programs are in place and meet National Pollution Discharge Elimination System (NPDES II/MS4) requirements. | Boards of Supervisors | PADEP, Growing Greener, CZM grants, PADEP, DVRPC |
| 19. | wha | ntify areas continuing to experience flooding problems and determine at remediation measures are feasible; participate with county, state, and eral efforts to reduce flooding damages. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | PADEP Growing Greener |
| 20. | ordi | dy deer and goose control issues and adopt any necessary related inance language as a way to protect against diseases and other threats. oport and foster intermunicipal cooperation on deer control matters | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 21. | Effi | cient use of energy resources | | |
| | a. | Direct residential and nonresidential development into Development Areas in all three jointure townships where supportive services and facilities exist or can be economically and efficiently provided to prevent sprawl and inefficient development patterns. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| | b. | Continue and advance efforts to permanently preserve open space and farmland. | Board of Supervisors | |
| | C. | Continue to review the joint zoning ordinance to ensure it promotes compact mixed-use development that is conducive to pedestrian and bicycle travel and reduction in vehicle trips. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD |
| | d. | Encourage connecting neighborhoods; provide traffic safety measures to discourage speeding and cut-through traffic on neighborhood streets. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD |
| | e. | Encourage the expansion of the public transportation and non- automotive options for travel within the Newtown Area. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission | CMAQ, SEPTA, DVRPC, BCTMA, BCPC |
| | f. | Preserve the Newtown Rail Line right-of-way and access to it for the future reactivation of public transportation service, to reduce the Newtown area's dependency on automobile use. | Joint Zoning Council, Newtown Board of Supervisors, Joint Planning Commission | SEPTA, PennDOT, DVRPC, BCTMA, BCPC |
| | | | | |

| g. | Support the efforts of the Bucks County Foodshed Alliance and other similar organizations (e.g., public awareness initiatives, procurement of funding sources) and consider other mechanisms to create community- supported agricultural enterprise to help preserve farming operations, provide food and energy sources close to home. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | PA Dept. of Agriculture, Bureau of Farmland Preservation, PA Grange, Agricultural Awareness Foundation of PA |
|----|---|---|--|
| h. | Consider amendments to township Subdivision and Land Development ordinances to incorporate provisions encouraging the use of renewable energy systems and energy conserving building design, as authorized by the Municipalities Planning Code. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| i. | Consider amendments to the JMZO that are designed to promote access to incident solar energy, as authorized by the Municipalities Planning Code. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |

| PR | PRINCIPLE 3 PROVIDE FOR MOBLITY AND CONNECTIONS | | | |
|-----|---|---|---|--|
| | Foster a safe, efficient, and comprehensive transportation system, of roads, rails, buses, transit, trails, bikeways, and sidewalks that provides a variety of options for traveling in and through the Newtown area. | | | |
| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance | |
| 1. | Make the land use - transportation planning connection by considering the transportation effects of planning decisions. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | | |
| 2. | Promote improvements that eliminate or avoid hazardous transportation conditions for motorists, bicyclists and pedestrians and are designed with consideration given to scenic, aesthetic, historic, environmental, and other community values. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | Transportation Enhancements, TIP, CMAQ, HTS/SRS | |
| 3. | Encourage pedestrian/multiuse path facilities for all new developments. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | | |
| 4. | Identify needed improvements to the road system and coordinate efforts within the Jointure and with PennDOT to address such improvements in a manner appropriate to the principles of context sensitive design. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | Transportation Enhancements, TIP, CMAQ, HTS/SRS | |
| 5. | Review and revise the joint zoning ordinance to ensure it promotes compact mixed-use development that is conducive to pedestrian and bicycle travel and reduction in vehicle trips. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD | |
| 6. | Connect neighborhoods; provide traffic calming design and street standards to discourage speeding and high cut-through traffic on neighborhood streets. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD | |
| 7. | Encourage the expansion of the mass transit and non-automotive options for travel within the Newtown Area. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission | CMAQ, SEPTA, DVRPC, BCTMA, BCPC | |
| 8. | Preserve the Newtown Rail Line right-of-way for future reactivation of public transportation service to reduce the Newtown area's dependency on automobile use. | Joint Zoning Council, Newtown Board of Supervisors, Joint Planning Commission | CMAQ, SEPTA, DVRPC, BCTMA, BCPC | |
| 9. | Support efforts by the Bucks County TMA to determine the feasibility of extending commuter rail service from Warminster along the New Hope and Ivyland railroad. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | | |
| 10. | Make sure developers pay their share for traffic improvements to compensate for the impact of their development | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | | |
| 11. | Continue to work together on traffic solutions. Continue to discuss the Bucks County Regional Traffic Study and work together to implement improvements that all municipalities agree to. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commission | Transportation Enhancements, TIP, CMAQ, HTS/SRS | |

PRINCIPLE 4 PRESERVE OPEN SPACE AND PROTECT AGRICULTURE Farming and related uses remain important parts of the landscape of the Jointure, but the pressure from development threatens to fragment these resources and counters the efforts to preserve them. Agricultural and horticultural practices continue to expand, and related activities, such as pick-your-own produce and farmers' markets, help support the area's farming community and provide local food sources. Funding or Technical **Recommended Strategies and Actions** Entity Responsible Assistance 1. Support the maintenance and extension of Agricultural Security Areas, which Joint Zoning Council, Boards of PA Dept. of protects farmers from nuisance regulations and allows interested farmers to Supervisors, Joint Planning Agriculture, Bureau Commission, Municipal Planning of Farmland participate in the Bucks County farmland preservation program. Commissions Preservation, PA Grange, BCAPP, Agricultural Awareness Foundation of PA Continue protection of agricultural soils through the zoning ordinance. Joint Zoning Council, Boards of 2. Supervisors, Joint Planning Commission, Municipal Planning Commissions LUPTAP, DCED, PA Accommodate accessory farm businesses by supporting zoning Joint Zoning Council, Boards of 3. Supervisors, Joint Planning Dept. of Agriculture accommodations for farm businesses. Commission, Municipal Planning Bureau of Farmland Commissions Preservation, LUPTAP. DCED. PA 4. Revise the Joint zoning ordinance to include buffer standards to separate Joint Zoning Council, Boards of new development from farmland. Supervisors, Joint Planning Dept. of Aariculture Bureau of Farmland Commission, Municipal Planning Commissions Preservation Support the efforts of the Bucks County Foodshed Alliance and other similar PA Dept. of 5. Joint Zoning Council, Boards of organizations (e.g., public awareness initiatives, procurement of funding Supervisors, Joint Planning Agriculture, Bureau sources) and consider other mechanisms to create community-supported Commission, Municipal Planning of Farmland agricultural enterprise to help preserve farming operations, provide food and Commissions Preservation, PA energy sources close to home. Grange, Agricultural Monitor trends in agricultural and horticultural uses and practices to Joint Zoning Council, Boards of PA Dept. of 6. Supervisors, Joint Planning determine if changes are necessary to the use, area, dimensional Agriculture, requirements related to these uses in the joint zoning ordinance and Commission, Municipal Planning Pennsylvania Grange Commissions municipal subdivision and land development ordinances. Joint Zoning Council, Boards of PA Dept. of 7. Continue farmland preservation efforts. Agriculture, Bureau Supervisors, Joint Planning Commission, Municipal Planning of Farmland Commissions Preservation, PA Grange, BCAPP, Agricultural Awareness Foundation of PA Continue open space requirements as part of development options. Improve Joint Zoning Council, Boards of 8. the JMZO standards for open space set asides by mandating meaningful and Supervisors, Joint Planning Commission, Municipal Planning useful open space as part of new developments. Commissions Support county, state and federal programs that result in the continuation of Boards of Supervisors BCOSPP 9 open space preservation efforts in the municipalities and evaluate funding sources for open space acquisition. 10. Promote private initiatives in conjunction with public funding sources to Boards of Supervisors BCOSPP protect strategic open space lands. 11. Continue to coordinate with the county regarding land and easement BCOSPP Boards of Supervisors purchases through the Bucks County Open Space and Natural Areas programs.

PRINCIPLE 5 BUILD AND MAINTAIN LIVABLE COMMUNITIES

Adequate community services and facilities such as police protection and schools and area for community institutions are important community assets. Community services and facilities are often what attract new residents to places like the Jointure area. Some community facilities and services are provided by the municipalities. Other services are provided by private contractors, by non-profit organizations, or by other levels of government. The Newtown Area is part of a larger region, and fostering a good community includes working well with neighboring communities.

| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance |
|----|--|--|--|
| 1. | Continue to require that the cost and impact of proposed development on community services and facilities be considered in zoning and land use decisions. Require services impact statements as part of zoning changes and amendment submissions. Continue present practices of using impact fees and developer contributions. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 2. | Continue to coordinate information sharing and planning among jointure agencies, departments and commissions to enhance the effectiveness of land use planning, to improve the delivery of services to residents and to plan for the future needs of service providers and the communities that they serve. | Boards of Supervisors, Municipal Planning Commissions | |
| 3. | Explore opportunities for the sharing of information and resources among the Jointure municipalities to reduce government costs and promote greater efficiency in the delivery of services. | Joint Zoning Council, Boards of Supervisors | Shared Municipal Services Grants, DCED, Community Revitalization Program Grants, Regional Police Assistance grant Program, Local Municipal Resources and Development Program |
| 4. | Review the zoning ordinance to eliminate high-impact and large institutional uses from the non-development area districts (Jericho Mountain and Conservation Management). | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, DCED |
| 5. | Recognize and plan for the impact of the National Veterans' Cemetery in the jointure area. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, Shared Municipal Services Grant, DCED |
| 6. | Institutional Uses and Development: | | |
| | a. Ensure that Jointure ordinance regulations promote institutional services in appropriate locations that are integrated into the community they serve without imposing burdens on neighborhoods. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, DCED |
| | b. Work with state agencies and area institutions to plan for the community needs for medical, educational, and recreational needs. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, Shared Municipal Services Grant, DCED |
| | Continue to cooperate with organizations in the region on issues of common interest. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, Shared Municipal Services Grant, DCED |
| 7. | Review the wastewater plans (Act 537 plans) for the jointure municipalities so that they support the land use and environmental principles of this comprehensive plan. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions, Bucks County Water and Sewer Authority, Newtown Bucks County Joint Municipal Authority | Act 537 Sewage Facilities Planning grants, PADEP |

| 8. | Review current zoning regulations to ensure that they adequately protect critical areas of groundwater recharge. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions, Municipal Environmental Advisory Councils, Newtown Artesian Water Company | LUPTAP, CDBG, DCED, BCOCBD, BCPC |
|-----|---|--|---|
| 9. | Consider formulating and adopting regulations regarding the establishment and protection of wellhead protection zones in the jointure. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions, Municipal Environmental Advisory Councils, Newtown Artesian Water Company | Growing Greener, PADEP, BCPC, LUPTAP, DCED |
| 10. | Identify areas continuing to experience flooding problems and determine if remediation measures are feasible. | Boards of Supervisors | Act 167 funding, PADEP, Growing Greener, PENNVEST, PADEP |
| 11. | Evaluate alternative best management practices for maintenance and retrofitting existing stormwater management basins. | Boards of Supervisors | PADEP, Growing Greener, CZM grants, PENNVEST, PADEP, DVRPC |

PRINCIPLE 6 PROVIDE PARKS AND RECREATION

Foster the development of active and passive recreation to promote the physical and mental well-being of residents of all ages. Parks, recreation facilities, and open space are important improvements and are vital aspects of sound communities.

| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance |
|----|---|---|---|
| 1. | Enhance cooperative efforts amongst participating municipalities, the school district, the Commonwealth, and private entities, to offer a wider range of facilities and programs than a single municipality can provide and avoid the unnecessary duplication of facilities and programs. | Joint Zoning Council, Boards of Supervisors | DCNR Grants, LUPTAP, Shared Municipal Services Grant, DCED |
| 2. | Continue to implement park and recreation plans of the jointure townships and update when needed. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | DCNR |
| 3. | Define and map existing trails and look for opportunities to expand them where appropriate. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 4. | Coordinate with the public school district and local private schools for use of school facilities for public recreation programs. | Joint Zoning Council, Boards of Supervisors | |
| 5. | Periodically reassess the mandatory dedication/fee in lieu contribution requirements in the subdivision and land development ordinances to determine if they should be adjusted to reflect current park and recreation needs and costs. | Boards of Supervisors, Municipal Planning Commissions | |
| 6. | Address the joint zoning ordinance requirements, as needed, to provide useable open space in residential developments that is suitable for active or passive recreation. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD |
| 7. | Consider trail connections between open space areas, recreation lands, and appropriate community facilities, local sidewalks and bicycle paths/lanes, and points of interest on a region-wide basis. Obtain access easements along the designated greenway/trail linkages network when possible as part of the subdivision and land development review process. | Boards of Supervisors | DCNR grants, LUPTAP, CDBG, DCED, BCOCBD |
| 8. | Consider designating locations for future public parks, playgrounds, and open space on an official map which provides a legal means for reserving such sites. | Boards of Supervisors, Municipal Planning Commissions | |

PRINCIPLE 7 SUSTAIN AND SUPPORT OUR COMMERCIAL AND JOBS BASE

Maintain the area's convenient and attractive commercial areas for the purchase of necessary goods and services, but prevent the over-commercialization of the area. Maintain and enhance the area's economic vitality, businesses and industries that provide jobs, convenient shopping and services, and quality of community life. Good land use planning can direct nonresidential development to areas where it makes sense.

| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance |
|-----|---|---|--|
| 1. | Allow commercial development in village neighborhood centers consistent with the character of existing village buildings in terms of use, scale, and appearance. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 2. | Review the joint zoning ordinance to ensure that commercial uses and mixed-use development, which include commercial uses, preserves the form and function of village areas and contributes to the preservation of historic structures. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, Center for Entrepreneurial Assistance, PHMC, The PA Downtown Center |
| 3. | Limit commercial activities to existing commercial centers, villages, and districts, including the Newtown Village shopping area, Sycamore Street, Washington Crossing Gateway, Penns Park, and Anchor and Wrightstown villages. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 4. | Maintain the existing commercial zoning district boundaries to reflect the intended future commercial land use pattern delineated in the comprehensive plan. No expansion of commercial districts is needed or proposed. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 5. | Support Sycamore Street area as a commercial and cultural center of the Jointure with its architectural diversity and history, and strengthen the area's economic stability and contribution to the Jointure through connectivity with the Borough and ongoing Main Street programs. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 6. | Review municipal ordinances to promote use, streetscape, and design requirements consistent with Sycamore Street Plan and town commercial districts in other appropriate commercial areas. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 7. | Promote pedestrian connections within and to all commercial areas. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 8. | Implement the plan for Washington Crossing Gateway. | Boards of Supervisors | |
| 9. | Maintain the area in the vicinity of the present Newtown Business Commons as the most appropriate location for industrial and associated uses. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 10. | Locate rural industrial uses not requiring public utilities in a an area adjacent to the Penns Park neighborhood center and in the portion of land bounded by the Neshaminy Creek, Route 232, Swamp Road and the quarries in Wrightstown Township. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 11. | Encourage corporate office and research uses into the Office Research Area near the access to I-95 and the Newtown Bypass. This are will continue to serve as a major employment center, enhanced with open space and ancillary facilities that support office and job centers, such as hotels and conference facilities. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 12. | Ensure that buffer standards and setback requirements in the Joint zoning ordinance protect adjoining properties. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | PADEP, Bureau of District Mining Operations |

| 13. | Provide for the continued extraction of quarry material within the confines of the existing areas designated for quarry use. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
|-----|--|---|---|
| 14. | Ensure that quarry operations are conducted in a manner that protects the health, safety and welfare of employees and residents of the community. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 15. | Ensure that adjoining properties and the region as a whole are protected from the visual and environmental impacts of quarry activities. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | |
| 16. | Work and coordinate with the PADEP, Bureau of District Mining Operations to ensure that quarry reclamation shall be undertaken and completed in a timely and appropriate manner. | Joint Zoning Council, Wrightstown Township Board of Supervisors, Joint Planning Commission, Wrightstown Township Planning Commission | PADEP, Bureau of District Mining Operations |

PRINCIPLE 8 PROTECT HISTORIC RESOURCES

Ensure the preservation of the area's historic resources by regulating future growth to recognize, protect and incorporate landscapes, buildings and other structures of historic, architectural and cultural significance, as required by the Pennsylvania Municipalities Planning Code.

| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance |
|-----|---|---|---------------------------------------|
| 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. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commission | |
| 2. | Preserve and protect historic resources in established historic areas and districts. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commission | |
| 3. | Promote the preservation of historic resources which are outside of the established historic areas and districts. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commission | |
| 4. | Require all development plans to identify historic resources (properties and structures) on the development site and on surrounding properties. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commission | |
| 5. | Develop a comprehensive catalogue and database of all historic properties and structures on previously collected information and additional studies as necessary. Make this available to the public. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commission | |
| 6. | Conduct preservation efforts in the area of the Delaware Canal in accordance with the recommendations of the <i>Delaware Canal Master Plan</i> and continue efforts to enhance the Washington Crossing Gateway plan. | Joint Zoning Council, Boards of Supervisors | PHMC |
| 7. | Ensure that the regulations governing the zoning districts in which historic resources are located promote the preservation of individual historic structures and the character of historic districts. Develop zoning standards that are designed to preserve historic villages, protect individual historic structures throughout the Jointure, or preserve the viewsheds of historic districts. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions | PHMC, NPS |
| 8. | Review the joint municipal zoning ordinance and other municipal regulations to ensure that they promote appropriate restoration and reuse of historic resources. Encourage efforts of private property owners toward restoration and/or adaptive reuse of historic structures and sites by providing additional use opportunities as incentives for preservation. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | |
| 9. | Discourage the demolition of historically significant structures. | Joint Zoning Council, Joint Planning Commission, Boards of Supervisors, Municipal Planning Commissions, Municipal Environmental Advisory Councils | PHMC |
| 10. | Work with the Pennsylvania Historical and Museum Commission to determine whether important Native American sites might be located in the Jointure and explore what measures can be taken to ensure that they are documented and, where possible, preserved. | Joint Zoning Council, Boards of Supervisors | РНМС |

PRINCIPLE 9 PRESERVE OUR VILLAGES

Protect the scale and character of the villages through land use and design controls so that the historical and cultural heritage of these villages in the Jointure can enhance the quality of life in the present and be preserved for future generations.

| | Recommended Strategies and Actions | Entity Responsible | Funding or Technical Assistance |
|----|--|---|---------------------------------------|
| 1. | Evaluate current village zoning regulations (VC and VR) to determine if revisions should be made to use and dimensional requirements and setbacks, design elements, or zoning techniques should be modified. Evaluate the village zoning district boundaries to determine if they are appropriate for the existing conditions and revise if necessary. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD |
| 2. | Work with adjacent municipalities on preservation and consistent s standards for Wycombe and Dolington. | Joint Zoning Council, Wrightstown Board of Supervisors, Joint Planning Commission, Wrightstown Planning Commission | LUPTAP, CDBG, DCED, BCOCBD |
| 3. | Ensure the road system serves to improve rather than diminish the quality of life in the villages through traffic calming, signs, and street design. | Boards of Supervisors | |
| 4. | Promote public and private improvements, such as pedestrian ways, parking areas, landscaping, and signs that improve the villages. | Boards of Supervisors | |
| 5. | Consider village viewshed overlay zoning regulations. | Joint Zoning Council, Boards of Supervisors, Joint Planning Commission, Municipal Planning Commissions | LUPTAP, CDBG, DCED, BCOCBD |

List of Acronyms

BCAPP- Bucks County Agricultural Preservation Program 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** BCTMA- Bucks County Transportation Management Association CDBG- Community Development Block Grant CMAQ- Congestion Mitigation and Air Quality Improvement Program DCED- Department of Community and Economic Development DCNR- Department of Conservation and Natural Resources DVRPC- Delaware Valley Regional planning Commission HTS/SRS- Hometown Streets & Safe Routes to School LUPTAP- Land Use Planning and Technical Assistance 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 WREN- Water Resources Education Network



RESIDENT SURVEY RESULTS

Newtown Area Comprehensive Plan Resident Survey Results

1. Where do you live?

| Newtown Township | 285 | 32% |
|--------------------------|-----------|-----|
| Upper Makefield Township | 556 | 63% |
| Wrightstown Township | <u>48</u> | 5% |
| Total Responses: | 889 | |

2. How long have you lived here?

| 1 to 5 Years | 208 | 23% |
|------------------|------------|-----|
| 11 to 15 Years | 148 | 17% |
| 16 to 20 Years | 93 | 10% |
| 6 to 10 Years | 169 | 19% |
| Less than 1 Year | 46 | 5% |
| Over 20 Years | <u>224</u> | 25% |
| Total Responses: | 888 | |
| | | |

3. Why did you choose to live in your township? (3 most important)

- 3.9 Raised here from
- 3.3 Convenient to Work
- 3.7 Reasonably Priced
- 3.8 Low Taxes
- 3 School System
- 3.4 Near Friends and Family
- 3.2 Good Place to Raise
- 2.4 General Quality of Life
- 3.8 Most of the Above

4. Surveyee Place of Work?

| Pennsylvania | | |
|-------------------|-----------|-----|
| Bucks County | 248 | 36% |
| Montgomery County | 23 | 3% |
| Delaware County | 4 | 1% |
| Chester County | 1 | 0% |
| Philadelphia | 49 | 7% |
| Other | <u>1</u> | 0% |
| Total | 326 | 47% |
| New Jersey | | |
| Princeton | 41 | 6% |
| Trenton | 52 | 7% |
| Other | <u>79</u> | 11% |
| Total | 172 | 25% |
| New York | | |
| New York | 17 | 2% |
| Other | <u>1</u> | 0% |
| Total | 18 | 3% |
| Delaware | 3 | 0% |
| Work at Home | 36 | 5% |
| Retired | 127 | 18% |
| Other | <u>14</u> | 2% |
| Grand Total | 696 | |

Spouse's Place of Work?

| Pennsylvania | | |
|-------------------|---------------|-----|
| Bucks County | 188 | 39% |
| Montgomery County | 19 | 4% |
| Delaware County | 2 | 0% |
| Chester County | 1 | 0% |
| Philadelphia | 37 | 8% |
| Other | <u>4</u> | 1% |
| Total | 251 | 52% |
| New Jersey | | |
| Princeton | 17 | 4% |
| Trenton | 27 | 6% |
| Other | <u>48</u> | 10% |
| Total | 92 | 19% |
| New York | | |
| New York | 8 | 2% |
| Other | <u>0</u> 8 | 0% |
| Total | 8 | 2% |
| Delaware | 0 | 0% |
| Work at Home | 28 | 6% |
| Retired | 100 | 21% |
| Other | <u>2</u> | 0% |
| Grand Total | 481 | |

Dependent's Place of Work?

| Pennsylvania | | |
|-------------------|---------------|-----|
| Bucks County | 36 | 71% |
| Montgomery County | 0 | 0% |
| Delaware County | 0 | 0% |
| Chester County | 0 | 0% |
| Philadelphia | 1 | 2% |
| Other | <u>1</u> | 2% |
| Total | 38 | 75% |
| New Jersey | | |
| Princeton | 1 | 2% |
| Trenton | 1 | 2% |
| Other | <u>3</u> | 6% |
| Total | 5 | 10% |
| New York | | |
| New York | 1 | 2% |
| Other | <u>1</u> 2 | 2% |
| Total | 2 | 4% |
| Delaware | 0 | 0% |
| Work at Home | 2 | 4% |
| Retired | 4 | 8% |
| Other | <u>0</u> | 0% |
| Grand Total | 51 | |

Newtown Area Comprehensive Plan Resident Survey Results (cont.)

5. What are the ages of your household?

- 146 Pre-School Age
- 257 Elementary School (Grade 1-8)
- 143 Secondary School (Grade 9-12)
- 125 College Age 18-22
- 774 Adults (22-54)
- 392 Young Seniors (55-70)
- 207 Older Seniors (70+)

6. What are the 5 best characteristics in your township and the jointure?

| | Township | Jointure |
|-------------------------------|----------|----------|
| Sidewalks/Trails | 4.93 | 5.25 |
| Traffic Control | 4.95 | 5.13 |
| Public Transportation | 5.54 | 5.65 |
| Infrastructure Maintenance | 5.04 | 5.27 |
| Taxes | 4.79 | 5.22 |
| Farmland Preservation | 3.23 | 4.03 |
| Historic Preservation | 3.64 | 4.37 |
| Public Water and Sewer | 5.11 | 5.42 |
| Growth Management | 3.96 | 4.48 |
| Neighborhood Preservation | 4.33 | 4.99 |
| Parks and Open Space | 3.40 | 4.13 |
| Natural Resource Protection | 4.26 | 4.73 |
| School System | 3.88 | 4.59 |
| Water Quality and Supply | 4.73 | 5.19 |
| Recreational Opportunities | 4.87 | 5.13 |
| Housing Variety/Affordability | 5.09 | 5.40 |
| Job Opportunities | 5.33 | 5.44 |
| Flooding/Stormwater Controls | 5.06 | 5.37 |
| Police Protection | 4.17 | 4.94 |
| Fire Protection | 4.36 | 5.04 |
| Ambulance Services | 4.58 | 5.12 |

Newtown Area Comprehensive Plan Resident Survey Results (cont.)

7. What are the 5 most important problems facing your township and the jointure?

| Community Characteristic | Township | Jointure |
|-------------------------------|----------|----------|
| | • | |
| Sidewalks/Trails | 5.16 | 5.54 |
| Traffic Control | 3.45 | 4.02 |
| Public Transportation | 5.25 | 5.49 |
| Infrastructure Maintenance | 4.96 | 5.20 |
| Taxes | 3.56 | 4.57 |
| Farmland Preservation | 3.95 | 4.52 |
| Historic Preservation | 4.75 | 5.10 |
| Public Water and Sewer | 5.31 | 5.55 |
| Growth Management | 3.15 | 3.81 |
| Neighborhood Preservation | 4.89 | 5.26 |
| Parks and Open Space | 4.59 | 4.96 |
| Natural Resource Protection | 4.77 | 5.07 |
| School System | 5.20 | 5.46 |
| Water Quality and Supply | 5.02 | 5.35 |
| Recreational Opportunities | 5.32 | 5.55 |
| Housing Variety/Affordability | 5.10 | 5.43 |
| Job Opportunities | 5.37 | 5.53 |
| Flooding/Stormwater Controls | 4.94 | 5.37 |
| Police Protection | 5.25 | 5.50 |
| Fire Protection | 5.26 | 5.53 |
| Ambulance Services | 5.25 | 5.52 |

8. Describe your Township's Quality of Life?

| Excellent | 297 | 33% |
|------------------|----------|------|
| Very Good | 435 | 49% |
| Good | 126 | 14% |
| Fair | 27 | 3% |
| Poor | 4 | 0.4% |
| Other | <u>1</u> | 0.1% |
| Total Responses: | 890 | |

9. Describe the Jointures's Quality of Life?

| Excellent | 293 | 34% |
|------------------|----------|------|
| Very Good | 427 | 49% |
| Good | 120 | 14% |
| Fair | 27 | 3% |
| Poor | 4 | 0.5% |
| Other | <u>1</u> | 0.1% |
| Total Responses: | 872 | |

Newtown Area Comprehensive Plan Resident Survey Results (cont.)

10. What one thing would improve the quality of life in your township?

(Essay question responses not included)

11. What one thing would improve the quality of life in the Jointure area as a whole?

(Essay question responses not included)

12. Are you satisfied with commercial development in your jointure?

| No | 475 | 55% |
|------------------|-----------|-----|
| Yes | 371 | 42% |
| No Opinion | <u>20</u> | 3% |
| Total Responses: | 866 | |

13. Are you satisfied with residential development in your jointure?

| No | 484 | 56% |
|------------------|------------|-----|
| Yes | <u>373</u> | 44% |
| Total Responses: | 857 | |



BACKGROUND ANALYSES

COMMUNITY CHARACTERISTICS -THE DEMOGRAPHICS OF THE JOINTURE EXISTING LAND USE IN THE JOINTURE RESIDENTIAL DEVELEOPMENT AREA ANALYSIS NONRESIDENTIAL DEVELOPMENT AREAS INVENTORY NATURAL RESOURCE PROTECTION HISTORIC RESOPURCES VILLAGE PLANNING AND PRESERVATION PARKS, RECREATION, AND OPEN SPACE COMMUNITY FACILITIES TRANSPORTATION LAND USE PLAN

Community Characteristics – The Demographics of the Jointure

Population – Numbers and Growth Rates

The municipalities that are a part of the Jointure generally experienced population growth during the 20th century, but it is clear that the majority of that growth has occurred over the last thirty-five years, particularly from 1980 to 2000 and particularly in Newtown Township. The total population in Newtown Township grew by 9,158 residents between 1980 and 1990 and the township added 4,521 persons from 1990 to 2000. Upper Makefield added 1,372 and 1,231 persons in those decades and Wrightstown 219 and 413. In total the Jointure gained 10,749 persons from 1980 to 1990 and 6,165 people from 1990 to 2000.

| Population | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 |
|-----------------|-------|-------|-------|-------|-------|--------|--------|--------|
| Newtown | 712 | 816 | 1,013 | 1,468 | 2,002 | 4,527 | 13,685 | 18,206 |
| Upper Makefield | 951 | 950 | 1,410 | 1,991 | 2,905 | 4,577 | 5,949 | 7,180 |
| Wrightstown | 716 | 799 | 909 | 1,734 | 2,266 | 2,207 | 2,426 | 2,839 |
| JOINTURE | 2,379 | 2,565 | 3,332 | 5,193 | 7,173 | 11,311 | 22,060 | 28,225 |

Source: U.S. Census (BCPC 00:MP-7)

The intensity of the Jointure's population growth becomes even more apparent when the percentage of population increase from decade to decade is considered. Population increased by 126 percent in Newtown between 1970 and 1980 and 202 percent between 1980 and 1990. The rate of population growth tailed off between 1990 and 2000, but was still 33 percent. In Upper Makefield, population growth has continued since 1970 but at a decreasing rate, with percentage increases of 56.7 percent (1970-1980), 30 percent (1980-1990) and 20.7 percent (1990-2000). Growth in Wrightstown Township in terms of percentage has gone from a 2.6 percent decline from 1970 to 1980 to increases of 9.9 percent and 17 percent in the time periods 1980-1990 and 1990-2000. Overall the Jointure saw a growth rate of 57.7 percent from 1970 to 1980, 95 percent from 1980 to 1990 and 27.9 percent from 1990 to 2000.

| Population Change | by Percentag | je | | |
|-------------------|--------------|--------|--------|--------|
| | 1970 | 1980 | 1990 | 2000 |
| Newtown | | | | |
| Population | 2,002 | 4,527 | 13,685 | 18,206 |
| Raw change | 534 | 2525 | 9158 | 4521 |
| Percent change | | 126.1% | 202.3% | 33.0% |
| Upper Makefield | | | | |
| Population | 2,905 | 4,577 | 5,949 | 7,180 |
| Raw change | 914 | 1672 | 1372 | 1231 |
| Percent change | | 57.6% | 30.0% | 20.7% |
| Wrightstown | | | | |
| Population | 2,266 | 2,207 | 2,426 | 2,839 |
| Raw change | 532 | -59 | 219 | 413 |
| Percent change | | -2.6% | 9.9% | 17.0% |
| JOINTURE | | | | |
| Population | 7,173 | 11,311 | 22,060 | 28,225 |
| Raw change | 1980 | 4138 | 10749 | 6165 |
| Percent change | | 57.7% | 95.0% | 27.9% |

Source: U.S. Census (BCPC 00:MP-7)

Changes in population in the Jointure and its member communities can also be compared with trends in adjacent municipalities as well as with trends in Bucks County, Pennsylvania and the Philadelphia metropolitan region (as defined by the Delaware Valley Regional Planning Commission). When compared in this fashion, it is apparent that rates of growth in the Jointure surpassed county, state and regional rates of growth.

| Population of Surrounding | Population | Population | Amount | Percent |
|------------------------------|------------|------------|---------|---------|
| Municipalities by Rank | 1990 | 2000 | Change | Change |
| | | | | |
| Warwick Township, PA | 5,915 | 11,977 | 6,062 | 102.5 |
| Buckingham Township, PA | 9,364 | 16,442 | 7,078 | 75.6 |
| Hopewell Township, NJ | 11,590 | 16,105 | 4,515 | 38.9 |
| Newtown | 13,685 | 18,206 | 4,521 | 33.0 |
| Lower Makefield Township, PA | 25,083 | 32,681 | 7,598 | 30.3 |
| Solebury Township, PA | 5,998 | 7,743 | 1,745 | 29.1 |
| Jointure | 22,060 | 28,225 | 6,165 | 27.9 |
| Upper Makefield | 5,949 | 7,180 | 1,231 | 20.7 |
| Wrightstown | 2,426 | 2,839 | 413 | 17.0 |
| Northampton Township, PA | 35,406 | 39,384 | 3,978 | 11.2 |
| Ewing Township, NJ | 34,185 | 35,707 | 1,522 | 4.5 |
| Middletown Township, PA | 43,063 | 44,141 | 1,078 | 2.5 |
| Newtown Borough, PA | 2,565 | 2,312 | -253 | (9.9) |
| | | | | |
| Regional Population | | | | |
| 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 | 3.7 |

Source: U.S. Census (<u>www.census.gov</u>, DVRPC Website (www.dvrpc.org), BCPC 00:MP-7)

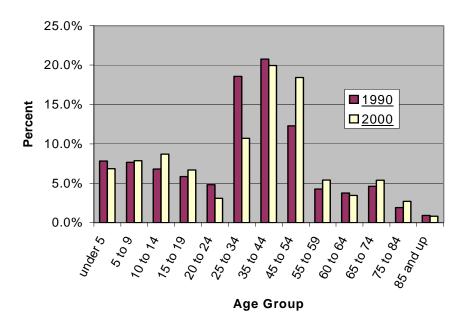
Population Age

Numbers for each of the three townships from 1980 to 2000 suggest that the population of the Jointure is getting older. This is consistent with trends seen in the Commonwealth, which by recent estimate has the third highest percentage of citizens 65 and older of all states in the nation.¹

| Median Age | 1980-M | 1980-F | 1990 | 2000 |
|-----------------|--------|--------|------|------|
| Newtown | 31.3 | 30.8 | 32.7 | 36.8 |
| Upper Makefield | 33.1 | 33.2 | 39.0 | 42.4 |
| Wrightstown | 31.3 | 33.3 | 37.7 | 39.9 |

Source: U.S. Census (BCPC 80:MP-2, 90:MP-11, 00:MP-6)

The population of the Jointure can also be broken down into age cohorts based on data supplied by the Census. The graph below illustrates that the most significant changes involve a decrease in the percentage of residents aged 25 to 34 (from 18.6 to 10.7 percent) and an increase in the percentage of residents aged 45 to 54 (from 12.3 to 18.4 percent). It suggests the possibility that more persons aged 25 to 54 advanced towards the older end of that grouping (which is likely), but also suggests that either a decreasing number of younger people moved into the Jointure or existing residents who were below the age of 25 in 1990 did not stay to replenish the 25 to 34 category as they aged. Throughout the Philadelphia region the retention of recent college graduates and other younger residents has been a concern in recent years.



Age Distribution in Jointure

Source: U.S. Census (DP-1 Profile Of General Demographic Characteristics, 2000 and 1990 Census, P011 Age- Universe: Persons (from American Fact Finder www.census.gov))

¹ U.S. Census Bureau, Population Estimates Branch (PaSDC Research Brief, March 10, 2005)

Socio-Economic Characteristics

The jointure's racial and ethnic composition indicates the general homogeneity of the area. Although the number of those residents who consider themselves non-white has increased in the last 20 years, the overwhelming majority of Jointure residents classify themselves as white. The Jointure's percentage of non-white residents in 2000 (5.3 percent) was below the county average of 7.5 percent. The percentage of the population that identified themselves as Hispanic or Latino in the 2000 Census was also quite small, with only 1.2 percent of Jointure residents characterizing themselves as such. (The county average was 2.3 percent.)

| Non-White and | 1980 | | 1990 | | 2000* | | | |
|-----------------|-------|----------|-------|----------|-------|----------|----------|----------|
| Hispanic | Non- | Percent | Non- | Percent | Non- | Percent | Hispanic | Percent |
| Population | White | of total | White | of total | White | of total | Latino | of total |
| Newtown | 127 | 2.8 | 517 | 3.8 | 1,154 | 6.3 | 242 | 1.3 |
| Upper Makefield | 81 | 1.8 | 106 | 1.8 | 207 | 2.9 | 81 | 1.1 |
| Wrightstown | 31 | 1.4 | 41 | 1.7 | 87 | 3.1 | 17 | 0.6 |
| Jointure | 239 | 2.1 | 664 | 3.0 | 1,448 | 5.3 | 340 | 1.2 |

Source: U.S. Census (BCPC 80:MP-2, 90:MP-11, 00:MP-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.

The Jointure's homogeneity was further reflected in information regarding the place of birth of residents and the languages used at home. Over 90 percent of the population of the Jointure was born in the United States and lived in a dwelling where English was the only language spoken there.

| Ethnic and Linguistic Characteristics- 2000 | | | | | | | | |
|---|---------|----------|---------|----------|--|--|--|--|
| | Born in | Percent | English | Percent | | | | |
| | the USA | of total | only | of total | | | | |
| Newtown | 16,789 | 92.0 | 15,253 | 90.3 | | | | |
| Upper Makefield | 6,704 | 93.4 | 6,326 | 93.3 | | | | |
| Wrightstown | 2,685 | 94.6 | 2,506 | 94.2 | | | | |
| Jointure | 26,178 | 92.7 | 24,085 | 90.0 | | | | |

Source: U.S. Census (DP-2 Profile Of Selected Social Characteristics, 2000 (from American FactFinder www.census.gov))

Residents of the Jointure exhibit a high level of educational attainment. Over 90 percent of the residents of each of the three townships have at least a high school diploma and between 42 and 61 percent of each have at least a Bachelor's Degree. These figures put the communities in the Jointure above the county average for both measures of educational opportunity. 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 Jointure hopes to attract.

| Educational | Percent High School | Percent Bachelor's |
|------------------|---------------------|--------------------|
| Attainment- 2000 | or higher | Degree or higher |
| Newtown | 95.8 | 54.7 |
| Upper Makefield | 95.7 | 61.5 |
| Wrightstown | 92.5 | 42.3 |
| | | |
| Bucks County | 88.6 | 31.2 |

Source: U.S. Census (00:MP-16)

Given that educational attainment is a strong predictor of income, it is not surprising that per capita income in the Jointure's municipalities ranges between 34,335 dollars and 56,228 dollars, again above the county per capita income of 27,430 dollars. This level of income will have an impact on the types of housing and the demand for goods and services in the community.

| \$ 34,335 |
|----------------|
| \$ 56,228 |
| \$ 42,623 |
| |
| \$ 27,430 |
| \$ \$ \$ |

Source: U.S. Census (00:MP-20)

Households and Families

A look at Jointure residents living together as a household or family in an individual dwelling unit further illustrates the growth that has been experienced by the community.² The Jointure saw an increase of 2,447 households and 1,689 families from 1990 to 2000. The percentage of households that were families slightly decreased from 80.4 percent in 1990 to 77.6 percent in 2000. The number of persons per household and number of persons per family either remained the same or decreased in this decade, consistent with the trend in the county.

| Households and Families | Number of Households | | Number of Families | | Persons per Household | | Persons per Family | |
|----------------------------|-------------------------|--------|-----------------------|-------|--------------------------|------|-----------------------|------|
| | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 |
| Newtown | 5,037 | 6,761 | 3,898 | 5,063 | 2.68 | 2.68 | 3.08 | 3.17 |
| Upper Makefield | 1,932 | 2,512 | 1,690 | 2,105 | 3.08 | 2.86 | 3.31 | 3.13 |
| Wrightstown | 828 | 971 | 677 | 786 | 2.93 | 2.92 | 3.29 | 3.26 |
| | | | | | | | | |
| Jointure | 7,797 | 10,244 | 6,265 | 7,954 | | | | |
| Bucks County | | | | | 2.8 | 2.69 | 3.24 | 3.17 |

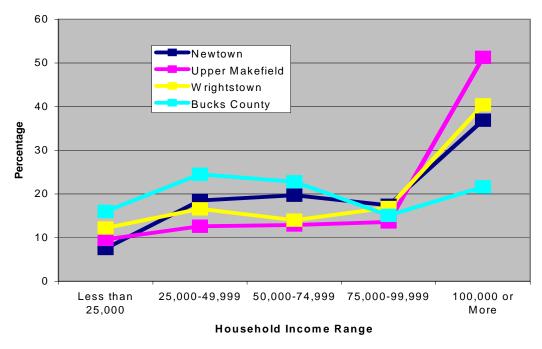
Source: U.S. Census (90:MP-15, 00:MP-15)

 $^{^{2}}$ A family household consists of 2 or more persons living together who are related by blood, marriage or adoption. Non-family households include persons living alone and households with 2 or more persons who are not related.

Median household and family income figures for 1989 and 1999, as presented in the table below, illustrate the same trends found earlier for per capita income in the municipalities of the Jointure. Both measures (household and family) of median income for the three townships exceeded the county amount in both 1989 and 1999. A closer look at these characteristics, as provided in the graph below, illustrates the distribution of households among several cohorts of income in the three communities and in comparison with the county in general. The percentage of households in all three municipalities in each of the lowest three income categories fell below the county percentage of households in those categories. All three townships and the county were close in the percentage of households having income in the 75,000 to 99,999 dollar range. All three townships exceeded the county in the percentage of households earning 100,000 dollars or more in their communities. Over 50 percent of households in Upper Makefield had an income of 100,000 dollars or more in 1999; the percentage of such households countywide was 21.6 percent. The level of household and family wealth indicated by these statistics may have an impact on the types of housing and the demand for goods and services that the community anticipates, plans for, and encourages.

| Households | Median | | Median | |
|-----------------|-----------|---------|--------|---------|
| and Families | Household | Income | Family | Income |
| | 1989 | 1999 | 1989 | 1999 |
| Newtown | 59,957 | 80,532 | 63,025 | 91,923 |
| Upper Makefield | 79,449 | 102,759 | 84,406 | 114,064 |
| Wrightstown | 55,041 | 82,875 | 58,950 | 92,372 |
| | | | | |
| Bucks County | 43,347 | 59,727 | 48,851 | 68,727 |

Source: U.S. Census (90:MP-24, 00:MP-20



Percentage of Households by Income Category 1999

Source: U.S. Census (00:MP-21)

Population Projections

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 2035. These projections are broken down to the municipal level. Provided below are the projections for the three townships to 2020.

| Population Projections - | 2005 to 2020 | | | | |
|--------------------------|--------------|--------|--------|--------|--------|
| | 2000 | 2005 | 2010 | 2015 | 2020 |
| Newtown | 18,206 | 19,201 | 20,346 | 21,428 | 22,452 |
| Upper Makefield | 7,180 | 8,575 | 9,596 | 10,561 | 11,474 |
| Wrightstown | 2,839 | 2,799 | 3,001 | 3,191 | 3,372 |
| JOINTURE | 28,225 | 30,575 | 32,943 | 35,180 | 37,298 |

Source: Delaware Valley Regional Planning Commission, Regional, County, and Municipal Population and Employment Forecasts, 2005-2035, Analytical Data Report No. 14 (August 2007)

There is historical and current evidence suggesting that such projections may overestimate the amount of growth that the Jointure will experience. The previous Comprehensive Plan (1998) provided a low, middle and high projection for population growth to 2000 as tabulated by the Bucks County Planning Commission. A comparison between the low-end projections for 2000 and the actual Census 2000 numbers indicates that even the low-end prediction overestimated the amount of population growth in all three municipalities.

| Comparison of 2000 Projection and 2000 Actual | | | | | | | |
|---|--------|----------|--------|--|--|--|--|
| | 1990 | 2000 low | 2000 | | | | |
| Newtown | | | | | | | |
| Population | 13,685 | 18,420 | 18,206 | | | | |
| Raw change | | 4,735 | 4,521 | | | | |
| Percent change | | 34.6% | 33.0% | | | | |
| Upper Makefield | | | | | | | |
| Population | 5,949 | 7,810 | 7,180 | | | | |
| Raw change | | 1,861 | 1,231 | | | | |
| Percent change | | 31.3% | 20.7% | | | | |
| Wrightstown | | | | | | | |
| Population | 2,426 | 2,920 | 2,839 | | | | |
| Raw change | | 494 | 413 | | | | |
| Percent change | | 20.4% | 17.0% | | | | |
| | | | | | | | |
| JOINTURE | | | | | | | |
| Population | 22,060 | 29,150 | 28,225 | | | | |
| Raw change | | 7,090 | 6,165 | | | | |
| Percent change | | 32.1% | 27.9% | | | | |

Source: U.S. Census (00:MP-7), Newtown Area Joint Municipal Comprehensive Plan (Update 1997)

Estimated population totals for 2006 down to the municipal level in Pennsylvania, released by the Census Bureau, also suggest that DVRPC projections may be high. A comparison of the DVRPC projections and projections using the 2006 estimate indicate that current growth is running below the totals projected by the DVRPC. Projections using the 2006 Census estimate were developed by subtracting the 2006 estimate from the 2000 census count, dividing that difference by 6 to establish an annual amount of growth, multiplying that figure by 4, and adding the product to the 2006 estimate to provide a projection for 2010. In both time periods for all 3 municipalities the projected amount and rate of growth based on the calculations derived from the 2006 Census was lower than the projected growth calculated by the DVRPC. For the Jointure as a whole, the DVRPC forecasted a growth rate of 16.7 to 2010. The alternative projection indicated an 11.6 percent rate to 2010.

| Analysis of 2005 and | 2010 Projec | tions with 20 | 06 Estimateo | l Populations | |
|----------------------|-------------|---------------|--------------|---------------|------------|
| | Census | Census | DVRPC | Projection | DVRPC |
| | Actual | Estimate | Projection | with 2006 | Projection |
| | 2000 | 2006 | 2005 | Est 2010 | 2010 |
| Newtown | | | | | |
| Population | 18,206 | 18,992 | 19,201 | 19,516 | 20,346 |
| Raw change | | 786 | 995 | 1,310 | 2,140 |
| Percent change | | 4.3% | 5.5% | 7.2% | 11.8% |
| Upper Makefield | | | | | |
| Population | 7,180 | 8,397 | 8,575 | 9,208 | 9,596 |
| Raw change | | 1217 | 1,395 | 2,028 | 2,416 |
| Percent change | | 16.9% | 19.4% | 28.2% | 33.6% |
| Wrightstown | | | | | |
| Population | 2,839 | 2,792 | 2,799 | 2,761 | 3,001 |
| Raw change | | -47 | -40 | -78 | 162 |
| Percent change | | -1.7% | -1.4% | -2.8% | 5.7% |
| JOINTURE | | | | | |
| Population | 28,225 | 30,181 | 30,575 | 31,485 | 32,943 |
| Raw change | | 1956 | 2,350 | 3,260 | 4,718 |
| Percent change | | 6.9% | 8.3% | 11.6% | 16.7% |

Source: U.S. Census (00:MP-7), Delaware Valley Regional Planning Commission, Municipal, County, and Region Population Estimates, 2000-2007, Regional Data Bulletin No. 87 (July 2008), Delaware Valley Regional Planning Commission, Regional, County, and Municipal Population and Employment Forecasts, 2005-2035, Analytical Data Report No. 14 (August 2007).

Housing

The number of housing units located in the Jointure is found below along with the 1990 total for the sake of comparison. As with population change, the numbers indicate a large amount of growth from 1980 to 2000, with a large rate of growth from 1980 to 1990, slowing from 1990 to 2000.

| Housing Units | 1980* | 1990 | 2000 |
|-----------------|-------|--------|--------|
| Newtown | | | |
| Housing Units | 1,564 | 5,329 | 6,848 |
| Raw change | | 3,765 | 1,519 |
| Percent change | | 240.7% | 28.5% |
| Upper Makefield | | | |
| Housing Units | 1,472 | 2,024 | 2,598 |
| Raw change | | 552 | 574 |
| Percent change | | 37.5% | 28.4% |
| Wrightstown | | | |
| Housing Units | 778 | 863 | 986 |
| Raw change | | 85 | 123 |
| Percent change | | 10.9% | 14.3% |
| JOINTURE | | | |
| Housing Units | 3,814 | 8,216 | 10,432 |
| Raw change | | 4,402 | 2,216 |
| Percent change | | 115.4% | 27.0% |

Source: U.S. Census (00-MP-1, 80:MD-1)

*The 1980 Census figures distinguished between seasonal and year-round dwelling units. For these municipalities the number of seasonal units was minimal, and the figure for year-round is used.

An overwhelming percentage of Newtown's housing stock less than 30 years old. Upper Makefield and Newtown have a higher percentage of newer housing than the county average. In the case of Wrightstown, its housing stock is older than housing found generally throughout the county, both in terms of having fewer homes built in the last 30 years and more dwellings 65 or more years old.

| Housing Unit Age- Percent Built | | | | | | | | |
|---------------------------------|---------|-------|-------|--|--|--|--|--|
| | 1939 or | 1940- | 1970- | | | | | |
| | Earlier | 1969 | 2000 | | | | | |
| Newtown | 2.5 | 5.5 | 92.0 | | | | | |
| Upper Makefield | 12.9 | 21.0 | 66.1 | | | | | |
| Wrightstown | 23.1 | 37.0 | 39.9 | | | | | |
| | | | | | | | | |
| Bucks County | 11.6 | 38.4 | 50.1 | | | | | |

Source: U.S. Census (00:MH-2)

Housing units can take many forms. In suburbia the single-family detached residence has tended to dominate in many communities. The Jointure as a whole is slightly under the countywide average of 64.1 percent of housing units being single-family detached units, although that lower percentage is largely caused by the distribution of housing types found in Newtown Township. The percentages of single-family detached units in Wrightstown and Upper Makefield are above the county average. The Jointure is providing sufficient multi-family housing (including apartment and townhouse units) and is functioning as a multimunicipal group is intended to function.

| | 1990 | | | 2000 | | |
|-----------------|---------|---------|---------------|---------|---------|---------|
| | Total | SF | Percent | Total | SF | Percent |
| | Units | Units | SF | Units | Units | SF |
| Newtown | 5,329 | 2,258 | 42.4% | 6,844 | 3,019 | 44.1% |
| Upper Makefield | 2,024 | 1,896 | 93.7% | 2,598 | 2,309 | 88.9% |
| Wrightstown | 863 | 785 | 91.0% | 986 | 927 | 94.0% |
| JOINTURE | 8,216 | 4,939 | 60. 1% | 10,428 | 6,255 | 60.0% |
| | | | | | | |
| Bucks County | 199,959 | 126,347 | 63.2% | 225,498 | 144,555 | 64.1% |

Source: U.S. Census (90:MH-2, 00:MH-3)

In 1990 the median value of housing units in each of the municipalities in the Jointure was approximately \$28,500 to \$179,200 above the countywide median of \$140,000. That trend of being above the countywide median was still evident in 2000. Jointure municipalities exceeded the Bucks County median of \$163,000 by anywhere from \$25,000 to \$186,900.

| 990 Median | 200 Median | - |
|---------------|---------------------------|--|
| Median | Modian | |
| | weuldh | Median |
| Rent | Value | Rent |
| 747 | 188,200 | 1,005 |
| 555 | 350,100 | 669 |
| 466 | 251,700 | 877 |
| | | |
| 524 | 163,200 | 736 |
| | Rent 747 555 466 | Rent Value 747 188,200 555 350,100 466 251,700 |

Source: U.S. Census (90:MH-1, 00:MH-2)

Housing unit ownership rates for both 1990 and 2000 were above the average throughout the county, and all three townships experienced an increase in the percentage of home ownership between 1990 and 2000.

| Housing Unit | | |
|-----------------|------|------|
| Ownership Rate | 1990 | 2000 |
| Newtown | 84.1 | 86.7 |
| Upper Makefield | 91.8 | 93.1 |
| Wrightstown | 87.0 | 88.3 |
| | | |
| Bucks County | 75.7 | 77.4 |

Housing Projections

Housing projections can help the Jointure plan for future community needs, such as park and recreation facilities and emergency services, and can be used as an indicator of whether or not the community has made adequate provision for various types of residential development. Housing projections are provided to the beginning of 2020. By 2015, the Census data will be available for 2010, at which time the projections will be revisited, based on more recent data.

Source: U.S. Census (90:MH-1, 00:MH-2)

Housing Projection by Population Growth Projection

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 totals for Jointure municipalities to 2020, as supplied by DVRPC, were subtracted from the Census 2000 population totals to determine the projected amount of population growth for each municipality 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, except for Upper Makefield Township, as discussed below. That calculation provided a projected number of new units for the period 2000 to 2020 for each municipality. 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 2000 U.S. Census 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, having been adopted by the regional planning agency.
- 3. The use of the average number of persons per dwelling unit in each municipality 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 in each municipality will remain constant and equal the average number calculated for 2000 throughout the entire period, except for Upper Makefield Township. In Upper Makefield, average number of persons per dwelling was adjusted downward (a more conservative figure) due to downward trends in the average number of persons per household seen in the Census.³

| Dwelling Unit | Census 2000 | Census 2000 | DVRPC | Population | Persons Per | Projected | Projected |
|-----------------|-------------|-------------|------------|------------|-------------|-----------|-------------|
| Projection | Housing | Population | Projection | Growth | Dwelling | New Units | Total Units |
| | Units | 2000 | to 2020 | 2000–20 | Unit | 2000–20 | in 2020 |
| Newtown | 6,848 | 18,206 | 22,452 | 4,246 | 2.66 | 1,596 | 8,444 |
| Upper Makefield | 2,598 | 7,180 | 11,474 | 4,294 | 2.67 | 1,608 | 4,206 |
| Wrightstown | 986 | 2,839 | 3,372 | 533 | 2.88 | 185 | 1,171 |
| | | | | | | | |
| Jointure | 10,432 | 28,225 | 37,298 | 9,073 | | 3,390 | 13,822 |
| | | | | | | | |

Source: U.S. Census (00:MP-7, 00:MH-1); Delaware Valley Regional Planning Commission, Regional, County, and Municipal Population and Employment Forecasts, 2005-2035, Analytical Data Report No. 14 (August 2007).

From 2000 to 2020, the projected number of new housing units in the Jointure is 3,390 for a total of 13,822 units in the Jointure by 2020.

³ The average number of persons per household in each municipality was assumed to remain a constant for Newtown Township and Wrightstown Township because the Census figures for the number of persons per household were unchanged between 1990 and 2000 in Newtown Township (2.68 persons per household both years) and almost unchanged in Wrightstown Township in the same time frame (2.93 in 1990 and 2.92 in 2000). In Upper Makefield Township, the number of persons per household dropped from 3.08 in 1990 to 2.86 in 2000. For this reason, the projected average number of persons per unit was adjusted to reflect this trend. The average number of persons per dwelling unit in Upper Makefield in 2000 (2.76 persons per dwelling unit) was decreased by one-half of the percentage reduction in the average number of persons per household seen in Upper Makefield between 1990 and 2000. This resulted in an average number of persons per dwelling unit of 2.67, a more conservative figure that increased the projected number of dwelling units between 2000 and 2020 in Upper Makefield.

Existing Land use in the Jointure

Regional Perspective

Sixty percent of the land area of the Jointure is all but evenly divided among three land use categories: rural residential (22 percent), single family residential (21 percent), and agricultural (20 percent). The total area of the rural residential land use is 6,050 acres, single family residential comprises 5,709 acres and agricultural 5,511 acres. The rural residential land use category includes parcels with a single-family detached dwelling and a size of five acres or greater (a detailed description of land use classification definitions can be found in the box on the next page). This category is used to identify large residential lots that may have potential for future subdivision and land development. The agricultural land use category is limited to parcels that are 20 acres or over. Parcels under 20 acres are classified as either vacant or rural residential land uses. Approximately 8 percent (2,297 acres) of land area in the Jointure is classified as being vacant.

Of the three communities in the Jointure, Newtown Township has the lowest percentage of land in agricultural use (9 percent) with 26 percent of the land area of Upper Makefield and 21 percent of Wrightstown in such use. Newtown also has a much lower percentage of land in rural residential use (7 percent) than the other two (27 percent in Upper Makefield and 30 percent in Wrightstown). Newtown Township also has the smallest amount of vacant land (4 percent or 288 acres). Ten percent of both Upper Makefield (1,379 acres) and Wrightstown (629 acres) fall into this category.

The amount of land used for single-family residential dwellings ranges from 18 to 22 percent of the total in each of the three townships. Multifamily residential land use comprises 1 percent of the land area of the Jointure at 343 acres. Much of this land use is concentrated in areas surrounding Newtown Borough, with other smaller concentrations in the northern part of Newtown Township and in the vicinity of Taylorsville in Upper Makefield.

Parks, Recreation and Protected Open Space land use covers 3,602 acres of the Jointure, accounting for 13 percent of the total land area. Over a quarter of Newtown Township's area (2,082 acres) falls into this category, while 10 percent of Upper Makefield (1,343 acres) and 3 percent of Wrightstown (177 acres) fall into this category.

Transportation and Utility uses take up 7 percent (1,882 acres) of the land area in the Jointure. It should be noted that this includes road rights-of-way where dedicated to a governmental agency. Newtown Township has 12 percent (884 acres) of its area dedicated to that use, while Wrightstown has 6 percent (365 acres) and Upper Makefield has 5 percent (633 acres). Governmental and Institutional uses are 3 percent (914 acres) of the Jointure's area with Newtown Township having the highest percent of land in this use at 9 percent (720 acres). Commercial uses occupy 594 acres (2 percent) of the

Land Use Classification Definitions

Single-family Residential—Consists of properties with single-family detached, or attached, one or two unit dwellings on lots under 5 acres. This category also includes mobile home parks.

Multi-family Residential—Includes properties with 3 or more attached dwelling units. This category includes medium to long-term housing accommodations, such as retirement complexes, residential care houses, sanatoriums, and nursing homes.

Rural Residential—The same as "Single-family Residential" except dwellings are on lots which are 5 acres or more (but do not qualify as "Agricultural").

Agricultural—Land which is 20 acres or greater, and exhibits agricultural or farmrelated characteristics such as; stables, orchards, active or fallow fields. This category may also include residential dwelling s units and farm related structures on the same lot.

Mining and Manufacturing—Includes heavy manufacturing industries, printing and advertising industries, as well as, building and landscaping material extraction.

Quarry—Includes land used or intended to be used for the extraction of rock or minerals.

Government and Institutional—Includes all federal, state, county, and municipal buildings and facilities, except those which are park and recreation related. All private, parochial and public schools are included as well as, parsonages, churches, cemeteries, emergency service facilities and fraternal organizations.

Commercial—Primary uses include, wholesale and retail trade establishments; finance, insurance; real estate and hotels. Other ambiguous commercial uses include day camps, tennis and racket clubs, health spas, swim clubs, skating rinks, race tracks, greenhouses, and nurseries.

Parks, Recreation and Protected Open Space—Includes municipal, county and state parks, state game lands, golf courses, campgrounds, and deed restricted or open space easements associated with residential developments.

Transportation and Utilities—Consists primarily of utility installations and right-ofways, terminal facilities, land fills, reservoirs, detention basins and parking lots. Calculations for roadway acreage is also included.

Vacant—Includes parcels without residential dwelling units but may include structures such as barns, stables, sheds, etc. Areas indicated as vacant do not automatically imply they are developable. For example, superfund sites, and abandoned quarries or land fills may have been indicated as vacant due to a lack of a more appropriate classification (or potential for adaptive reuse). Also, natural resource restrictions may be present, limiting development potential.

Jointure's territory; Newtown Township again leads this category with 415 acres (5 percent) dedicated to this use. Quarries, only found in Wrightstown Township, also occupy 2 percent (455 acres) of land in the Jointure. Manufacturing takes up 1 percent of the total, with the most land area devoted to this use found in Newtown Township (146 acres).

| | | Newtown Township | | | | | | |
|----------------------------|---------|------------------|---------|-----------|-------|--|--|--|
| | 19 | 90 | 20 | Change | | | | |
| Land Use | (acres) | (percent) | (acres) | (percent) | 90-05 | | | |
| Transportation & Utility | 604 | 8% | 884 | 12% | 280 | | | |
| Single Family Residential | 1,117 | 15% | 1,621 | 21% | 504 | | | |
| Multi Family Residential | 206 | 3% | 294 | 4% | 88 | | | |
| Agriculture | 1,594 | 21% | 695 | 9% | -899 | | | |
| Manufacturing | 307 | 4% | 146 | 2% | -161 | | | |
| Quarry | 0 | 0% | 0 | 0% | 0 | | | |
| Government & Institutional | 450 | 6% | 720 | 9% | 270 | | | |
| Parks, Rec., Open Space | 1,521 | 20% | 2,082 | 27% | 561 | | | |
| Commercial | 207 | 3% | 415 | 5% | 208 | | | |
| Rural Residential | 664 | 9% | 500 | 7% | -164 | | | |
| Vacant | 984 | 13% | 288 | 4% | -696 | | | |
| TOTAL | 7,654 | | 7,645 | | | | | |

| | | Upper Makefield Township | | | | | | |
|----------------------------|---------|--------------------------|---------|-----------|--------|--|--|--|
| | 19 | 90 | 20 | Change | | | | |
| Land Use | (acres) | (percent) | (acres) | (percent) | 90-05 | | | |
| Transportation & Utility | 474 | 4% | 633 | 5% | 159 | | | |
| Single Family Residential | 1,987 | 15% | 2,958 | 22% | 971 | | | |
| Multi Family Residential | 10 | 0% | 34 | 0.2% | 24 | | | |
| Agriculture | 5,020 | 37% | 3,483 | 26% | -1,537 | | | |
| Manufacturing | 10 | 0% | 0 | 0% | -10 | | | |
| Quarry | 0 | 0% | 0 | 0% | 0 | | | |
| Government & Institutional | 69 | 1% | 67 | 0.5% | -2 | | | |
| Parks, Rec., Open Space | 660 | 5% | 1,343 | 10% | 683 | | | |
| Commercial | 45 | 0% | 53 | 0.4% | 8 | | | |
| Rural Residential | 3,237 | 24% | 3,664 | 27% | 427 | | | |
| Vacant | 1,883 | 14% | 1,379 | 10% | -504 | | | |
| TOTAL | 13,395 | | 13,614 | | | | | |

| | | Wright | stown Tov | vnship | |
|----------------------------|---------|-----------|-----------|-----------|-------|
| | 19 | 90 | 20 | Change | |
| Land Use | (acres) | (percent) | (acres) | (percent) | 90-05 |
| Transportation & Utility | 280 | 4% | 365 | 6% | 85 |
| Single Family Residential | 797 | 13% | 1,130 | 18% | 333 |
| Multi Family Residential | 0 | 0% | 14 | 0.2% | 14 |
| Agriculture | 1,828 | 29% | 1,334 | 21% | -494 |
| Manufacturing | 12 | 0.2% | 10 | 0.2% | -2 |
| Quarry | 250 | 4% | 455 | 7% | 205 |
| Government & Institutional | 57 | 1% | 127 | 2% | 70 |
| Parks, Rec., Open Space | 50 | 1% | 177 | 3% | 127 |
| Commercial | 47 | 1% | 126 | 2% | 79 |
| Rural Residential | 1,906 | 30% | 1,886 | 30% | -20 |
| Vacant | 1,027 | 16% | 629 | 10% | -398 |
| TOTAL | 6,354 | | 6,253 | | |

| | | J | ointure Tot | al | |
|----------------------------|---------|-----------|-------------|-----------|--------|
| | 19 | 90 | 20 | 05 | Change |
| Land Use | (acres) | (percent) | (acres) | (percent) | 90-05 |
| Transportation & Utility | 1,358 | 5% | 1,882 | 7% | 524 |
| Single Family Residential | 3,901 | 14% | 5,709 | 21% | 1,808 |
| Multi Family Residential | 216 | 1% | 343 | 1% | 127 |
| Agriculture | 8,442 | 31% | 5,511 | 20% | -2,931 |
| Manufacturing | 429 | 2% | 156 | 1% | -273 |
| Quarry | 250 | 1% | 455 | 2% | 205 |
| Government & Institutional | 576 | 2% | 914 | 3% | 338 |
| Parks, Rec., Open Space | 2,231 | 8% | 3,602 | 13% | 1,371 |
| Commercial | 299 | 1% | 594 | 2% | 295 |
| Rural Residential | 5,807 | 21% | 6,050 | 22% | 243 |
| Vacant | 3,894 | 14% | 2,297 | 8% | -1,598 |
| TOTAL | 27,403 | | 27,512 | | |

Land Use Trends

There have been notable shifts in the land use characteristics of the individual municipalities of the Jointure as well as in the characteristics of the Jointure, as measured against comparable statistics from 1990. While absolute precision in identifying and determining exact changes is not possible, due to differences in the mapping techniques and technology between 1990 and 2005 and potential errors in mapping, especially in the earlier data, the information provides enough accuracy to identify important trends and changes.

The Jointure continued to lose land classified as agricultural in the period 1990 to 2005, and losses in this category constituted the greatest change in percentage (9 percent decrease) and in number of acres (2,931 acre decrease). Newtown Township saw agricultural uses decline from 21 percent of its total area to 9 percent (899 acres lost), while Upper Makefield had the largest loss of acreage at 1,537 acres (a decline from 37

percent to 26 percent). Wrightstown lost 494 acres of land classified as agricultural (a decline from 29 to 21 percent) in this period.

While additional research would be needed to draw a direct connection between decreases in land classified as agricultural and increases in single-family residential uses, it is not unreasonable to posit this link, especially since land used for single-family residential dwellings in the Jointure increased the most, both in percentage (7 percent) and in number of acres (1,808 acres) dedicated to that use. Newtown and Upper Makefield saw the percentage of land in the single-family residential category increase from 15 percent to 21 and 22 percent, respectively. Wrightstown saw an increase from 13 to 18 percent in this time frame.

Another potential source of land now in single-family residential use is vacant land, which declined from 14 percent (3,894 acres) of the total area of the Jointure in 1990 to 8 percent (2,297 acres) of the total in 2005. The decline was greatest in Newtown Township which saw a decline in the total amount of vacant land by 696 acres. Vacant land in both Wrightstown and Upper Makefield dropped to 10 percent of the total land area in those communities.

The percentage of land in rural residential use saw a modest increase in the Jointure, from 21 to 22 percent of the total area of the community. Rural residential areas in Upper Makefield actually increased by 3 percent (427 acres) with a 2 percent drop in Newtown and virtually no change in Wrightstown. The steadiness of this percentage may not be a result of stagnating growth, but instead may indicate the breakup of agricultural lots (moving such land into the rural residential category) that matches the flow of rural residential areas into other land use categories at the same time. In particular this may be the case in Upper Makefield, which saw large declines in agricultural land and increases in rural residential territory.

Parks, recreation and open space increased by 1,371 acres (from 8 to 13 percent of the total) throughout the Jointure from 1990 to 2005. Newtown added 561 acres, Upper Makefield added 683 acres and Wrightstown saw an increase of 127 in this category.

Other land use categories saw slight increases during this time period. Land devoted to transportation and utility uses increased from 5 percent to 7 percent of the total, with the largest increase in Newtown Township (280 acres, from 8 to 12 percent of the total). Much of this can be attributed to the construction of additional roads associated with new development. The area of the Jointure devoted to quarries, government and institutional uses, and commercial uses each increased by 1 percent. Quarries and commercial areas went up from 1 percent of the total to 2 percent; increases in quarry land include property that was newly acquired but was not necessarily put into active production. The land area devoted to government and institutional uses grew from 2 to 3 percent of the total. Between 1990 and 2005 the amount of land devoted to multifamily housing in each township increased slightly and continued to comprise 1 percent of the total area of the Jointure.

Manufacturing saw a decline in the amount of land classified as being in this use, going from 2 percent to 1 percent of the total. While the land devoted to manufacturing decreased in all three townships, the decline was greatest in Newtown Township (161 acres). Conversion of manufacturing areas in the Newtown Industrial Commons (now Newtown Business Commons) to other uses, such as offices, may have played a role in this decline.

In the period from 1990 to 2005 the Jointure continued to see losses in the amount of land devoted to agricultural production and in the amount of vacant land, coupled with an increase in the amount of territory devoted to single-family residential development. While the amount of rural residential territory in the Jointure stayed relatively constant, this may not be a counter-indication of development, but may be the result of the loss of agricultural land and vacant areas to large residential lots (where the potential for further development is still present). Efforts to preserve more areas for recreational use and open space appear to have increased the amount of land dedicated to that purpose. Land uses that may be associated with increased development (transportation facilities, utilities, governmental facilities, institutional uses and commercial activities) showed a slight increase in the amount of land devoted to them. While parts of the Jointure were not directly touched by growth, land use changes indicate that development continued to be intense in Newtown Township and throughout the Jointure as a whole.

Residential Development Area Analysis

Section 301 of the MPC lists the following as one required element of a comprehensive plan:

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

This section of the comprehensive plan evaluates development potential in light of the projected dwelling units between 2000 and 2020 and identifies existing zoning districts intended for higher density residential development. These higher density zoning districts, called Residential Development Areas, are intended to provide the opportunity for the construction of housing and are appropriate locations for a full range of services and complementary land uses that would support housing in such areas. Residential Development Areas are intended to provide sufficient areas for a full range of housing options in the most appropriate locations to establish healthy, attractive, convenient, safe, and well-serviced living environments, without causing environmental problems elsewhere in the region. As part of this comprehensive plan update, the Jointure needs to determine if it is providing a Residential Development Area sufficient to accommodate projected population and housing growth over the next 15 years.

The 1997 Update to the *Newtown Area Joint Municipal Comprehensive Plan* analyzed the zoning and land use patterns found in the Jointure and determined that the land included in the R-2 Residential 2 District would be sufficient to accommodate projected housing growth for very low, low, and moderate income housing through the year 2010. This section of the comprehensive plan analyzes whether the amount of land in zoning districts where multifamily housing is permitted is sufficient to provide for the amount of such housing that should be accommodated by the Jointure in the timeframe of this planning document. As part of this comprehensive plan update, the Jointure needs to determine if it is providing sufficient areas to accommodate multifamily housing growth over the next 15 years.

The steps in the process of determining reasonable housing projections for the Newtown Area are described below. The projections focus on the 2000 to 2020 time period.

A. Housing Demand within the Jointure

Step 1. Projected Residential 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 totals for Jointure municipalities to 2020, as supplied by DVRPC, were subtracted from the Census 2000 population totals to determine the projected amount of population growth for each municipality 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, except for Upper Makefield Township, as discussed below. That calculation provided a projected number of new units for the period 2000 to 2020 for each municipality. 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 2000 U.S. Census 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 in each municipality 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 in each municipality will remain constant and equal the average number calculated for 2000 throughout the entire period, except for Upper Makefield Township. In Upper Makefield, average number of persons per dwelling was adjusted downward (a more conservative figure) due to downward trends in the average number of persons per household seen in the Census.¹

| Dwelling Unit | Census | Census | | | | | Persons | Proj. | Proj. | Proj. | Proj. |
|-----------------|---------|------------|------------|------------|------------|------------|----------|-------|-------|---------|---------|
| Projection | 2000 | 2000 | DVRPC | DVRPC | Population | Population | Per | New | New | Total | Total |
| | Housing | Population | Projection | Projection | Growth | Growth | Dwelling | Units | Units | Units | Units |
| | Units | 2000 | to 2015 | to 2020 | 2000–15 | 2000–20 | Unit | 00–15 | 00–20 | in 2015 | in 2020 |
| Newtown | 6,848 | 18,206 | 21,428 | 22,452 | 3,222 | 4,246 | 2.66 | 1,211 | 1,596 | 8,059 | 8,444 |
| Upper Makefield | 2,598 | 7,180 | 10,561 | 11,474 | 3,381 | 4,294 | 2.67 | 1,266 | 1,608 | 3,864 | 4,206 |
| Wrightstown | 986 | 2,839 | 3,191 | 3,372 | 352 | 533 | 2.88 | 122 | 185 | 1,108 | 1,171 |
| | | | | | | | | | | | |
| Jointure | 10,432 | 28,225 | 35,180 | 37,298 | 6,955 | 9,073 | | 2,600 | 3,390 | 13,032 | 13,822 |

Source: U.S. Census (00:MP-7, 00:MH-1); Delaware Valley Regional Planning Commission, Regional, County, and Municipal Population and Employment Forecasts, 2005-2035, Analytical Data Report No. 14 (August 2007).

From 2000 to 2015, the projected number of new housing units in the Jointure is 2,600 for a total of 13,032 units in the Jointure by 2015. The total number of units in the Jointure is projected to be 13,822 by 2020, an increase of 790 units between 2015 and 2020.

¹ The average number of persons per household in each municipality was assumed to remain a constant for Newtown Township and Wrightstown Township because the Census figures for the number of persons per household were unchanged between 1990 and 2000 in Newtown Township (2.68 persons per household both years) and almost unchanged in Wrightstown Township in the same time frame (2.93 in 1990 and 2.92 in 2000). In Upper Makefield Township, the number of persons per household dropped from 3.08 in 1990 to 2.86 in 2000. For this reason, the projected average number of persons per unit was adjusted to reflect this trend. The average number of persons per dwelling unit in Upper Makefield in 2000 (2.76 persons per dwelling unit) was decreased by one-half of the percentage reduction in the average number of persons per household seen in Upper Makefield between 1990 and 2000. This resulted in an average number of persons per dwelling unit of 2.67, a more conservative figure that increased the projected number of dwelling units between 2000 and 2020 in Upper Makefield.

Step 2. Residential Units Constructed between 2000 and 2006

As stated in the section above, the projection of the amount of residential growth involves use of the most recent U.S. Census data available from Census 2000. Since 2000, the construction of residential units has continued in the Jointure and any analysis involving the period 2000 to 2015 should take into account the amount of housing that has been built since that census. According to information supplied by the townships, the following amounts of residential dwellings have been built in the time frames indicated below:

| Newtown Township Number of Units Built, 2001 to 2006 | 500 |
|---|-------|
| Upper Makefield Township Number of Units Built, 2001 to 2006 | 543 |
| Wrightstown Township Number of Units Built, 2001 to 2006 | 55 |
| Total Units Built in Jointure | 1,098 |

It should be noted that this total for the first six years of the period in question is nearly one-third of the total projected new residential units for the twenty year period covered by this analysis. This indicates that the total projected new residential units (3,390) is a conservative figure that would require a rate of growth higher than what has been seen over the last six years in order to be reached.

The number of residential units that have not yet been constructed and must be accommodated is the difference between the 2015 and 2020 projections and the number of unit built in the time frame 2000–2006

| Projected number of units, 2000–2015 | 2,600 |
|---------------------------------------|---------|
| Actual units built, 2000–2006 | - 1,098 |
| Projected units to be built 2006–2015 | 1,502 |
| | |
| Projected units to be built 2006–2015 | 1,502 |
| Projected units to be built 2015–2020 | + 790 |
| Projected units to be built 2006–2020 | 2,292 |

The projected number of residential units that will be built in the Jointure from 2006 to 2015 and 2020 is 1,507 units and 2,292 units, respectively.

Step 3. Projected Units Constructed Outside of the Residential Development Area

Not all of the residential development that occurs in a community takes place in the Residential Development Area that the municipality has designated to accommodate future growth. New units are constructed in zoning districts not part of this area. The

municipalities in the Jointure are no exception to this phenomenon, as is demonstrated by information supplied by the townships regarding the location of new residential units constructed in the last five years. There is no reason to expect that this trend will not continue and that some percentage of new units will be constructed outside the Residential Development Area in the period 2006 to 2020. The projected amount of demand for space in the Residential Development Area can be reduced based on a projected amount of residential development that will occur in zoning districts not included in that area.

The following assumptions were used to develop this portion of the projection:

1. The zoning districts listed below will be considered part of the Residential Development Area in this update (see demand analysis later in Part B of this section of the update) and any residential units constructed in the last five years in these zoning districts will be counted as having been constructed with in the Residential Development Area when calculating the percentage of units built outside that area. Including these districts (most of which were not considered in the 1997 Update) increases the number of units considered to be in the development area and decreases the percentage of units built outside the development area. This results in a more conservative projection because it reduces the expected amount of future growth outside the district and increases the number of new units that must be accommodated within the Residential Development Area.

The zoning districts are: R-2 Residential 2 R-1 Residential 1 VR-1 Village Residential 1 VR-4 Village Residential 4 CR-2 Country Residential 2 CR-1 Country Residential 1

- 2. The remaining zoning districts will be considered to be outside of the Residential Development Area in this update, and any residential units constructed in the last five years in these zoning districts will be counted as having been constructed outside the Residential Development Area when calculating the percentage of units built outside that area.
- 3. The percentage of dwelling units built outside of the residential development area (as defined by this plan) in the last five years in the township which has the smallest percentage of units built outside the development area will provide a conservative approximation of the percentage of dwelling units that will be constructed outside the residential development area in the entire Jointure for the period 2006–2020.

| Newtown Township Percentage of units built outside the Residential Development Area | 65% |
|---|-------|
| Upper Makefield Township Percentage of units built outside the Residential Development Area | 29% |
| Wrightstown Township Percentage of units built outside the Residential Development Area | 42% |
| | |
| Projected total units to be built in the Jointure from 2006–2015 | 1,502 |
| Projected total units to be built in the Jointure from 2015–2020 | 790 |
| Projected percentage of units to be built outside of the Residential Development Area in the Jointure from 2006–2020 | 29% |
| Projected total units to be built outside of the Residential Development Area in the Jointure from: | |
| 2006–2015 | 435 |
| <u>2015–2020</u> | +229 |

The number of residential units that must be accommodated in the Residential Development Area is the difference between the projected total units to be built in the Jointure 2000–2020 and the projected number of units to be built outside of the Residential Development Area (RDA) 2006–2020.

2006-2020

664

| Projected number of new units in Jointure, 2006–2015 | 1,502 |
|--|-------|
| Projected number of new units outside RDA, 2006–2015 | - 435 |
| Projected units to be accommodated in the RDA, 2006–2015 | 1,067 |
| | |
| Projected number of new units in Jointure, 2015–2020 | 790 |
| Projected number of new units outside the RDA, 2015–2020 | - 229 |
| Projected units to be accommodated in the RDA, 2015–2020 | 561 |
| | |
| Projected units to be accommodated in the RDA, 2006–2015 | 1,067 |
| Projected units to be accommodated in the RDA, 2015–2020 | 561 |
| Projected units to be accommodated in the RDA, 2006–2020 | 1,628 |
| | |

As a result of these calculations, the assumed number of new units that will need to be accommodated within the Residential Development Area of the Jointure from 2006 to 2015 and 2020 will be 1,067 units and 1,628 units, respectively.

B. Supply of Available Land within the Jointure

To determine the capacity of the Residential Development Area, the potentially developable land remaining in the zoning districts that compose this area was analyzed. Potentially developable lands consist of vacant, agricultural, or rural residential properties.²

Methodology Used to Determine Developable Land and Potential Units

- 1. From the land use maps prepared by the Bucks County Planning Commission and reviewed by township officials, parcels listed as vacant, rural residential, or agricultural in certain zoning districts were identified as developable parcels. Potential units were calculated using the highest permitted density in the district.
- 2. Certain vacant parcels with single unit capacity that appear to be to have been part of a previous subdivision were removed from land available for development.
- 3. Members of the Newtown Area Regional Planning Commission reviewed maps showing developable sites and identified parcels that, to their knowledge, were not available. These were removed from land available for development.
- 4. Potential natural resource constraints on the remaining parcels were analyzed by mapping floodplains and wetlands located on those parcels. Parcels that displayed a large amount of these resources (generally sites where approximately 50 percent or more of the site was covered by floodplains or wetlands) were removed as land available for development. Parcels with less than 50 percent coverage by these resources were retained, since cluster and performance standard development options are available in these districts and density is calculated in terms of gross, not net, site area.

The previous update in 1997 focused on the available land in the Jointure in the R-2 Residential 2 District and determined that there was enough available land to accommodate projected housing growth for very low, low, and moderate income housing through the year 2010. Thus, this portion of the current analysis began with an assessment of whether existing developable land in the R-2 District could accommodate the number of residential units projected in the Residential Development Area and would allow that district alone to continue to serve as the Residential Development Area of the Jointure. Seven parcels that could accommodate 763 new units were identified in the R-2 District.

| Projected units to be accommodated in the RDA, 2006-2015 | 1,067 |
|--|-------|
| Projected new units potentially accommodated in the R-2 District | - 763 |
| Projected new units to be accommodated elsewhere, 2006-2015 | 304 |
| Projected new units to be accommodated elsewhere, 2015-2020 | + 561 |
| Projected new units to be accommodated elsewhere, 2006-2020 | 865 |

² A rural residential property contains a dwelling unit and is 5 acres or over, which may result in future subdivision.

The analysis found that the remaining developable areas currently included in the R-2 District would not be sufficient to meet the anticipated growth in the Jointure to 2020. Since there is limited area remaining in the R-2 for development, the decision was made to expand the Residential Development Area to include additional zoning districts that encompass areas that previous comprehensive plans and updates had identified as potential locations for higher density development.

As a result, the R-1 Residential 1 District, the VR-1 Village Residential 1 District, the VR-4 Village Residential 4 District, the CR-2 Country Residential 2 District and the CR-1 Country Residential 1 District were included as part of the Residential Development Area and analyzed to determine the amount of land available for residential development. Numerous parcels that could accommodate 886 new units were identified in these districts. The results of this study indicated that the amount of land available for development in these districts, combined with available areas in the R-2 District, not only would be sufficient to provide for projected growth in the Jointure, but also would provide a safety margin of approximately 21 units.

| Projected units to be accommodated in the RDA, 2006-2015 | 1,067 |
|--|--------|
| Projected new units potentially accommodated in the R-2 District | - 763 |
| Projected new units to be accommodated in other districts, 2006-2015 | 304 |
| Projected new units to be accommodated in other districts, 2015-2020 | + 561 |
| Projected new units to be accommodated in other districts, 2006-2020 | 865 |
| Projected new units accommodated in the CR-2 District | 158 |
| Projected new units accommodated in the R-1 District | 26 |
| Projected new units accommodated in the VR-1 District | 85 |
| Projected new units accommodated in the VR-4 District | 22 |
| Projected new units accommodated in the CR-1 District | + 595 |
| Projected new units accommodated | 886 |
| Projected units not accommodated in the R-2 District, 2006-2015 | 304 |
| Projected new units accommodated in the districts above | 886 |
| Surplus projected new units accommodated in the development area, 2015 | 582 |
| Surplus projected new units accommodated in the development area, 2015 | 582 |
| Projected new units to be accommodated in other districts, 2015-2020 | - 561 |
| Surplus projected new units accommodated in the development area, 2015 | 21 |
| Projected units to be accommodated in the RDA, 2006-2015 | 1,067 |
| Projected units that can be built in the Residential Development Area | 1,649 |
| Surplus projected new units accommodated in the development area | 582 |
| Projected units to be accommodated in the RDA, 2006-2020 | 1,628 |
| Projected units that can be built in the Residential Development Area | 1,649 |
| Surplus projected new units accommodated in the development area, 2 | 020 21 |

The 2015 margin of 582 reflects a safety factor of 1.54 in the number of units that are projected to be constructed in the Residential Development Area by 2015 and the number that can be accommodated in that area. The 2020 margin of 21 reflects a small safety factor of 1.01 in the number of units that are projected to be constructed in the Residential Development Area by 2020 and the number that can be accommodated in that area. Nevertheless, these margins are in addition to the conservative methodology described above that eliminated many parcels originally considered for inclusion within the totals of developable land in the Jointure.

C. Multifamily Accommodation

The purpose of this section is to determine if there is adequate land zoned for multifamily housing in the Jointure. The analysis employed involves a comparison of the actual and potential amount of such housing found in the Jointure compared to the percentage of multifamily housing found throughout the county. Recent court rulings in Bucks County and Commonwealth Court suggest that this is an acceptable type of analysis in Pennsylvania.³

The overall percentage of multifamily units for Bucks County, is 30.7 percent based upon the 2000 U.S. Census.⁴ Using the projection found in Part A above as the potential number of housing units that would be constructed, the following calculations summarize the potential number of multifamily units to determine if the Jointure can match the county's average of multifamily units.

| 2015 housing units (projected) | 13,032 |
|---|----------------------------------|
| Multiply by the county average of MF units (30.7%) | x 0.307 |
| Required number of multifamily units for the | |
| Jointure to match the county percentage of multifamily units | 4,000 |
| Multifamily units already constructed (2000 Census) | 4,061 |
| Surplus units to meet county percentage, 2015 | 61 |
| Multifamily units constructed since 2000 Census | 0 |
| Potential capacity of existing R-2 District for multifamily units | + 763 |
| Number of multifamily units above county average, 2015 | 824 |
| | |
| | |
| 2020 housing units (projected) | 13,882 |
| 2020 housing units (projected) Multiply by the county average of MF units (30.7%) | 13,882 x 0.307 |
| | , |
| Multiply by the county average of MF units (30.7%) | , |
| Multiply by the county average of MF units (30.7%) Required number of multifamily units for the | x 0.307 |
| Multiply by the county average of MF units (30.7%) Required number of multifamily units for the Jointure to match the county percentage of multifamily units | <u>x 0.307</u> 4,261 |
| Multiply by the county average of MF units (30.7%) Required number of multifamily units for the Jointure to match the county percentage of multifamily units Multifamily units already constructed (2000 Census) | x 0.307 4,261 4,061 |
| Multiply by the county average of MF units (30.7%)Required number of multifamily units for the Jointure to match the county percentage of multifamily unitsMultifamily units already constructed (2000 Census)Deficit of units to meet county percentage | x 0.307 4,261 4,061 200 |

³ This analysis is described in *Heritage Building Group v. Plumstead Township Board of Supervisors* 76 Bucks Co. L. Rep. 127 (2002). The ruling in that case was affirmed by Commonwealth Court (*Heritage Building Group v. Plumstead Township Board of Supervisors* (No. 3020 C.D. 2002, October 17, 2003).

⁴ Multifamily units include attached unit structures (e.g., townhouses) of 3 or more unit structures (e.g., apartment buildings), but excludes 2-unit structures (e.g., twins).

Based upon this analysis, the number of multifamily units in the Jointure in 2000 was already sufficient to result in a percentage of multifamily units that would exceed the projected multifamily percentage in 2015 based on Bucks County's average number of multifamily units in 2000. However, the number of multifamily units in the Jointure in 2000 would be deficient to result in a percentage of multifamily units that would meet or exceed the projected multifamily percentage in 2020 based on Bucks County's average number of multifamily units in 2000. Nevertheless, land exists in the R-2 District that could be developed for multifamily use. If that land were developed in its entirety for multifamily use at the highest permissible density, an additional 763 multifamily units could be constructed. This would result in an amount of multifamily housing in 2020 that would exceed the amount needed to equal the county percentage by 563 units.

D. Conclusions

This analysis indicates that the assumed number of new units that will need to be accommodated within the Residential Development Area of the Jointure between 2006 and 2015 will be 1,067 units and between 2006 and 2020 will be 1,628 units.

It also indicates that the amount of land available in the Residential Development Area, as defined by this update, is sufficient both to provide for projected growth in the Jointure and to provide a safety margin of approximately 582 units in 2015 and 21 units in 2020.

The number of multifamily units in the Jointure was already sufficient in 2000 to result in a percentage of multifamily units in 2015 that exceeds the county average. Land exists in the R-2 District that could be developed for multifamily use to provide an additional 763 multifamily units, which could accommodate a percentage of multifamily units in 2020 that exceeds the county average.

Nonresidential Development Areas Inventory

Since the 1997 Update, there has been substantial development in the nonresidential zoning districts in the Jointure, in addition to the development that has occurred in the residential districts. Several of the parcels identified in 1997 as undeveloped are no longer vacant and data developed by the Bucks County Planning Commission indicates that approximately 44 commercial, industrial, or institutional development proposals have been filed in Newtown Township since 1998. Sixteen such proposals were recorded for Wrightstown Township and four in Upper Makefield Township.¹ One purpose of this element of the plan is to identify developable parcels within the commercial, office, and industrial districts.

This section does not include the same type of calculations of anticipated growth for comparison with the capacity of the nonresidential development areas as was found in the residential development areas analysis. Such a comparison is not relevant for several reasons. From the legal standpoint, the courts have not developed a regional fair share concept for nonresidential uses. From a practical standpoint, employment, shopping and service needs are not directly associated with a locality. Newtown Area residents regularly travel to surrounding and distant places for employment, shopping, and services. Instead, this section provides an inventory of the developable land in the nonresidential zoning districts. Potentially developable lands consist of vacant, agricultural, or rural residential properties.²

Inventory of Developable Land in Nonresidential Areas

Newtown Borough

While Newtown Borough is not currently a part of the Newtown planning program, it should be noted that its location at the geographic center of the Jointure has a significant impact on the nonresidential needs of the community. The Borough has often been referred to as the "hub" of the region, not unlike the hub of a wagon wheel, and draws many of its customers from the surrounding areas within the Jointure. One of the economic development objectives of the *Comprehensive Plan for the Borough of Newtown* (December 14, 1999) involves fostering a balance between businesses that serve the needs of borough residents and businesses whose customer base is more regional in nature.

The nonresidential districts in the borough have been developed with a variety of uses. Although there may be room on some of these properties for the expansion of the existing uses, there are no open larger parcels that would provide for substantial nonresidential development. Additional nonresidential development would be of an in-fill or redevelopment character that complements the residential nature of the community. Recent zoning changes enacted by the borough were geared towards providing suitable

¹ Not all of these proposals involved parcels located in non-residential districts.

² A rural residential property contains a dwelling unit and is 5 acres or over, which may result in future subdivision.

regulations for the different types of businesses found in various parts of the borough and did not significantly increase its nonresidential areas as a whole.

Newtown Township

OR Office Research District – This area is intended for the special office, research, and industrially related uses on large tracts of land, which will provide a major employment center for the region while enhancing its open space characteristics and natural features. This district is located in the eastern corner of the township along its border with Middletown Township and Lower Makefield Township. Under the standards of the zoning ordinance, the minimum lot area is fifteen acres and the maximum 15 impervious surface ratio is 50 percent. Three agricultural parcels that meet the minimum lot size and that total approximately 122 acres are located in this district. Eleven noncontiguous vacant parcels that do not meet the minimum size requirement are also found there.

PC - *Planned Commercial District* – This area is intended to provide for a cohesive unit of commercial stores with transportation facilities that are arranged and constructed according to a master plan that will provide for the major commercial needs of the region. This area is generally located west of Newtown Borough and south and east of the Newtown Bypass (PA Route 413). A minimum lot size of 20,000 square feet is required; a maximum impervious surface ratio of 50 percent is permitted. No developable parcels are currently located in this district.

LI - Light Industrial District – This area is intended to provide a wide range of industrially related uses which will provide a major employment center for the region while enhancing its open space characteristics and natural features. This area is located east of Newtown Borough and contains the Newtown Business Commons. The zoning ordinance requires a minimum lot area of 80,000 square feet and permits a maximum impervious surface ratio of 65 percent. Eight parcels which have an approximate total area of 20 acres and meet the minimum lot size requirement of the district are currently vacant. Five other vacant parcels that do not meet the minimum lot size requirement are also located in the LI District.

O-LI Office-Light Industrial District – This district is intended to provide a variety of industrial and office uses that complement the Light Industrial District. The standards provided for this district are meant to encourage high quality development which is compatible with adjacent residential and nonresidential areas. It is generally located north of the LI Light Industrial District along Newtown–Yardley Road. The zoning ordinance requires a minimum lot area of 80,000 square feet and permits a maximum impervious surface ratio of 65 percent.

CC, *TC* and *TC-2* - *Convenience Commercial and Town Commercial Districts* – The purpose of the CC District is to provide reasonable standards for the orderly development of highway-oriented businesses and commercial uses. The TC District is intended to provide a commercial area with easy pedestrian access and visual impact. The district accommodates vehicular traffic but discourages uses or standards not in keeping with the architectural and historic character of the area. The TC-2 District is meant to provide a

mixed-use area at the entrance to the township allowing residential uses, nonresidential uses, and the conversion of residences to nonresidential use in a style compatible with the character of the Newtown area.

The CC and TC districts form the commercial area of primarily small lots and small shops along Sycamore Street, German Avenue, and Newtown-Richboro Road. The TC-2 District is located south of Newtown Borough in the vicinity of South State Street (Newtown-Langhorne Road).

The CC District has a minimum lot size requirement of 20,000 square feet for lots served by public sewer facilities and 60,000 square feet for parcels with on-lot systems. The maximum impervious surface ratio is 50 percent. Four vacant lots have been identified in the vicinity of German Avenue, but none of these meets the minimum lot size requirements for the district.

The TC District requires a minimum lot area of 7,500 square feet and a maximum impervious surface ratio of 80 percent. Three parcels with a total of approximately 2 acres are vacant and meet the minimum lot area requirement of the district. Three other parcels are vacant but do not meet this requirement.

The TC-2 District mandates a minimum lot size of 20,000 square feet where lots are serviced by public water facilities, except for Specialty-Cultural Shopping Facilities (Use E-14) and Terminals (Use F-3) which must have a minimum lot size of 3 acres. The maximum impervious surface ratio is 50 percent. Three vacant parcels with a total size of approximately 3 acres meet the 20,000-square-foot requirement; a fourth vacant parcel which is adjacent to the former right-of-way of Newtown Rail Line (SEPTA R8) is about 9.3 acres in size.

PS and PS-2 – Professional Services Districts – The purpose of the PS District is to provide standards for the development of professional and governmental offices that are compatible with adjacent residential uses within villages. A single developed parcel, landlocked by Newtown Borough, is located in the PS District in the township.

The PS-2 District is intended to promote the development of professional and business offices that are compatible with existing residential and nonresidential uses in and around the district. The district requires a minimum lot size of 40,000 square feet and a maximum impervious surface ratio of 30 percent for permitted nonresidential uses. Five parcels, all meeting the minimum lot size requirement and with a total size of about 45 acres are zoned PS-2 along Durham Road (PA Route 413) between the Newtown Township Building and Newtown Grant. We note, however, that at this time there is a pending application to rezone a considerable portion of these lots to the R-2 Residential 2 District.

POS, EIR and MS – Park and Open Space District, Educational, Institutional and Recreational District, Municipal Services District – Parcels owned by the Council Rock School District and the Bucks County Community College are located in the EIR District. Municipal parks, as well as Tyler State Park, are in the POS District. The Newtown Township Municipal Complex on Durham Road is in the MS District.

Upper Makefield Township

VC-1 – Village Commercial 1 District – There is a VC-1 Village Commercial district that is located in the village of Taylorsville and also extends south along the Delaware Canal between Taylorsville Road and the canal. The purpose of this district is to provide for small neighborhood commercial areas. Three types of new development may take place: development of a tract for a single use, development of a tract for a variety of uses, and a conversion of a single structure into a new single use. The zoning ordinance requires a minimum lot size of 3,000 square feet for lots served by public sewer facilities and one acre for parcels with on-lot systems. The maximum impervious surface ratio is 75 percent.

An agricultural parcel and two rural residential parcels (one of which is only partially located in the VC-1 District) that currently meet the minimum lot size requirement and that include a total area of approximately 26 acres are located in the district. Another 18 vacant parcels (one of which is only partially located in the VC-1 District) which all meet the minimum lot size requirement and total about 14 acres also are found there. It should be noted that seven of those parcels (with a total area of about six acres) are in the portion of the district south of Taylorsville along the Delaware Canal.

POS, EIR and MS – Park and Open Space District, Educational, Institutional and Recreational District, Municipal Services District – Parcels owned by the Council Rock School District are located in the EIR District. Municipal parks as well as Washington Crossing State Park and the Canal Park are in the POS District. The Upper Makefield Township Municipal Complex on Eagle Road is in the MS District.

Wrightstown Township

VC-1 and VC-2 – Village Commercial Districts – As noted above, the VC-1 District is intended to provide for small neighborhood commercial areas in villages. Three types of new development may take place: development of a tract for a single use, development of a tract for a variety of uses, and a conversion of a single structure into a new single use. The purpose of theVC-2 District is to achieve the same type and scale of village development as identified by the VC-1.

The VC-1 District in Wrightstown Township is located in Penns Park in the vicinity of the intersection of Second Street Pike (PA Route 232) and Penns Park Road. The VC-2 District is located in Anchor north and south of the intersection of Second Street Pike and Durham Road (PA Route 413).

A minimum lot size of 3,000 square feet for lots served by public sewer facilities and one acre for parcels with on-lot systems is required in both districts. The maximum impervious surface ratio in both districts is 75 percent.

No developable parcels are currently located in the VC-1 District. Two adjacent vacant parcels that include a total of approximately 3 acres are located in the VC-2 District. Both parcels meet the minimum lots size requirement, although the shape of one of the parcels may preclude it from being developed independently.

PS - Professional Services District – The PS District is intended to provide reasonable standards for the harmonious development of professional and governmental offices which are compatible with adjacent residential uses. This district is located in Anchor east and west of the intersection of Second Street Pike and Durham Road. Lots of 15,000 square feet or larger are permitted in the PS District with a maximum impervious surface ratio of 55 percent. A single lot about 1.7 acres in size is vacant in the district.

VR-4 – Village Residential/Mixed Development District – The VR-4 District provides standards and regulations for older villages and hamlets built prior to the development of municipal zoning and planning. Along with single-family detached dwellings limited commercial and office uses are also permitted. This district can be found in the village of Wrightstown along Durham Road. The minimum lot size permitted in this district for nonresidential uses is 30,000 square feet with a maximum impervious surface ratio of 35 percent. A rural residential parcel with an area of approximately 15 acres is located in this district. (It should be noted that this parcel was also listed as available for residential development in the Residential Development Areas Analysis.)

RI and RI-A – Rural Industrial Districts – The RI District is intended for less intensive industrial uses in areas where public water and sewer facilities are not provided. The RI-A District serves the same purposes as the RI District and also provides appropriate locations for recycling and refuse facility uses.

Two areas in RI District are found in Wrightstown Township. One is located southwest of Penns Park along both Second Street Pike and Penns Park Road. The other is located southwest of the intersection of Second Street Pike and Swamp Road. The RI-A District is located southwest of Penns Park along Penns Park Road.

A minimum lot size of 2 acres for lots served by public water and sewer facilities and 3 acres for parcels without such service is required in both districts. The maximum impervious surface ratio in both districts is 5 percent.

No developable parcels are currently located in the RI-A District. An agricultural parcel of almost 30 acres is located in the part of the RI District found near the intersection of Second Street Pike and Swamp Road. Three rural residential parcels and three vacant parcels which include a total of approximately 51 acres are located in the area of RI District located near Penns Park. All but one of these independently meet the minimum lot area requirements of the district. Several, including the one smaller than the required minimum, are adjacent to each other and could be combined to form larger lots.

QA – Quarry/Agricultural District – The QA District is intended to provide for safe and efficient quarrying operations. Several areas located in the QA District are found in the southwestern portion of the township.

QA-A - Quarry/Agricultural District-A – The QA-A District is intended to provide for safe and efficient quarrying operations and provide for a safe location for the sale of consumer fireworks. The district is limited one parcel and potion of another, both associated with existing extraction activities. The two areas located off of Swamp Road, just west of Second Street Pike, in the southwestern portion of the township.

POS, EIR and MS – Park and Open Space District, Educational, Institutional and Recreational District, Municipal Services District – Parcels in the village of Penns Park owned by the Council Rock School District are in the EIR District. There are currently no parcels in the POS District in Wrightstown Township. The Wrightstown Township Municipal Complex is located in the MS District.

Natural Resource Protection

The natural features of the landscape contribute to the quality of life in the Newtown Area. Farmland, woodlands, steep slopes, stream valleys, and gently rolling open spaces are some of the resources that are both visually attractive and have important functions in the ecology of the region. If these features are to remain assets, protection of specific natural resources must be considered in land use decisions.

Environmental features are best protected by limiting development, encroachment, grading, or intrusion into areas containing these natural features. The Joint Municipal Zoning Ordinance has established maximum, quantifiable encroachment standards based on the capacity of the natural feature to withstand the effects of clearing and grading. The intensity and location of buildings and site alterations are limited by these standards, which are intended to accommodate disruption with minimal impacts on the site and areas beyond its boundaries. The zoning ordinance also requires a site capacity calculation, a procedure for site evaluation that limits the overall impacts of site development.

Development practices that include concern for natural limitations of the land often benefit both the builder and the community. For example, development that preserves floodplains and wetlands protects property and saves money. Proper grading in steep slope areas and the protection of natural forest cover helps avoid soil erosion and sedimentation in drainage systems, reducing the costs of treating stormwater runoff and maintaining stormwater facilities. Low-impact development techniques that minimize intrusions into sensitive resource areas reduce the need for extensive infrastructure and revegetation of the site. These and similar costs are minimized when development takes place within the natural limitations of the land.

Constitution and Statutory Precedent

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

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

As would be expected, the courts have had to evaluate how this constitutional provision would be applied and who would assume the role of protector of these rights of the people. The Commonwealth Court has stated that, although various state departments have certain responsibilities, the local governments of the Commonwealth have been delegated authority for land use planning and preservation of open space and natural features under the MPC. The constitutional mandate must rely on various statutes of the Commonwealth for implementation. The state laws specify responsibility for different aspects of natural resource protection. The court has also stated that, in exercising this responsibility, municipalities must permit reasonable development of property while managing public natural resources. The court emphasized that controlled development, rather than no development, should be the focus and is the responsibility of local governments.

The Pennsylvania legislature, through the MPC, has charged the local governing bodies with the responsibility for protecting the citizens' health, safety, and welfare through comprehensive planning and land use regulation. Over the years, increased emphasis has been given to the protection of natural resources. The MPC includes the following provisions:

Section 301(a)(6). The municipal comprehensive plan shall include a plan for the protection of natural and historic resources to the extent not preempted by federal or state law. This clause includes, but is not limited to, wetlands and aquifer recharge zones, woodlands, steep slopes, prime agricultural land, floodplains, unique natural areas and historic sites.

Section 503(2)(v). A subdivision and land development ordinance may include provisions for ensuring that land which is subject to flooding, subsidence, or underground fires either shall be safe for the proposed use or that these areas shall be set aside for uses that do not endanger life or property.

Section 603(b). Zoning ordinances may not exceed the regulations of the Surface Mining Conservation and Reclamation Act, the Noncoal Surface Mining Conservation and Reclamation Act, the Oil and Gas Act, the Bituminous Mine Subsidence and Land Conservation Act, the Nutrient Management Act, the Agricultural Area Security Law, or an Act Protecting Agricultural Operations from Nuisance Suits and Ordinances Under Certain Circumstances.

Section 603(c)(7). Zoning ordinances may contain provisions to promote and preserve prime agricultural land, environmentally sensitive areas, and areas of historic significance.

Section 603(f). Zoning ordinances may not unreasonably restrict forestry activities. To encourage maintenance and management of forested or wooded open space and promote the conduct of forestry as a sound and economically viable use of forested land throughout the Commonwealth, forestry activities, including, but not limited to, timber harvesting, shall be a permitted use by right in all zoning districts in every municipality.

Section 605(2)(ii), (iii), and (vii). Where zoning districts are created, all provisions shall be uniform for each class or uses or structures, within each district, except that additional classifications may be made within any district for

the regulation, restriction, or prohibition of uses or structures at, along, or near natural or artificial bodies of water, places of relatively steep slope or grade, or other areas of hazardous geological or topographical features, floodplain areas, agricultural areas, sanitary landfills, and other places having a special character or use affecting or affected by their surroundings.

Section 606. The zoning ordinance shall include or reference a statement of community development objectives relating to the need for protecting natural resources.

Section 609.1(c)(3) and (4) and Section 916.1(c)(5)(iii) and (iv). In evaluating a substantive challenge to the validity of a zoning ordinance by a landowner, the governing body or the zoning hearing board shall determine the suitability of the site for the intensity of use proposed by the site's soils, slopes, woodlands, wetlands, floodplains, aquifers, natural resources, and other features. It shall also evaluate the impact of the proposed use on the site's soils, slopes, woodlands, wetlands, floodplains, natural resources, and natural features, the degree to which these are protected or destroyed, the tolerance of the resources to development, and any adverse environmental impacts.

Critical Natural Features

The following is an explanation of the basis for the protection of natural features and a description of the specific natural features that are given protection under the standards of the joint municipal zoning ordinance.

Floodplains and Floodplain Soils

Floodplains are relatively flat or low-lying areas adjacent to surface waters where flooding has occurred in the past and will likely occur in the future. During periods of heavy rains and high stream flow, floodplains provide temporary storage for floodwaters, reducing flooding threats to adjacent areas and providing a slower, more consistent flow of water. Floodplain soils or alluvial soils are eroded soils from previous floods that were deposited along the banks of streams or other watercourses. The natural vegetation supported by moist floodplains helps trap sediment from upland surface runoff, stabilizes stream banks for erosion control, and provides shelter for wildlife and proper stream conditions for aquatic life. Smaller streams and watercourses have not had floodplains identified by the Federal Emergency Management Agency (FEMA). In these areas floodplain soils are used as indicators of floodplains.

Floodplains and floodplain soils occur along the Neshaminy Creek on the southwest border of Wrightstown and Newtown townships, Mill Creek in Wrightstown Township, Newtown and Core creeks in Newtown Township, and the Delaware River, Jericho Creek, Houghs Creek, and tributaries to Pidcock Creek in Upper Makefield Township. The Pennsylvania Floodplain Management Act (Act 166 of 1978) requires municipalities identified by the Flood Insurance Administration (FIA) as having flood prone areas to participate in the National Flood Insurance Program (NFIP). Under the administration of the Department of Community and Economic Development (DCED), flood prone municipalities are required to adopt ordinances that meet NFIP standards for regulating development in the floodplain. The Joint Municipal Zoning Ordinance prohibits any development, use, or activity which would cause any increase in the 100year floodplain.

Floodplain limitations do not preclude all development. Agricultural uses, private and public recreation uses (e.g., golf courses, ball fields, golf driving ranges, picnic grounds, wildlife and nature preserves, swimming areas, passive open space, hunting and fishing areas, hiking trails) and uses incidental to residential structures (e.g., lawns, gardens, play areas) are permitted. Uses permitted by special exception include utilities, public facilities, and improvements such as bridges, streets, railroads, and pipelines; water dependent uses such as docks, piers, and marinas; temporary uses such as circuses and carnivals; and the storage of materials and equipment, provided they are not buoyant, flammable, explosive, or polluting. Any residential or nonresidential use granted a variance to permit construction within the 100-year floodplain must have its lowest floor elevated 1½ feet above the 100-year flood elevation. The structure must also be anchored to prevent collapse, flotation, and lateral movement.

Floodplain (alluvial) soils are important in areas where NFIP has not identified and calculated the floodway and flood fringe areas. In these unmapped areas, the floodplain soils indicate where flooding had occurred in the past. Unless a hydrological study is undertaken to prove that flooding has not occurred in recent times, these floodplain soils should be considered part of the floodplain. In 2002, the Natural Resource Conservation Service (NRCS) issued a comprehensive new soil survey with new soil classifications. The Joint Municipal Zoning Ordinance relies on soils identified by the 1975 Soil Survey of Bucks and Philadelphia Counties to regulate unmapped floodplain areas.

Wetlands

Wetlands are undrained, saturated soils that support wetland vegetation where the water table is at or near the surface or where shallow water covers the area due to permanent or seasonal inundation of surface or groundwater. The protection of wetlands is important for several reasons. Wetlands play a key role in maintaining and improving water quality by filtering out chemical and organic wastes. Wetlands store water during storms and floods, thereby reducing hazards to life and property. Wetlands provide groundwater recharge. Finally, wetlands are important habitats for many threatened or endangered plants and animals.

In addition to local protection standards, wetlands are 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 Corps 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.

Since the Newtown Area Joint Municipal Zoning Ordinance (and Commonwealth and federal law) largely prohibits the direct destruction of wetlands, most threats to wetlands come from the secondary impacts of development. Grading and development near wetlands causes these resources to suffer the loss of hydrologic function and critical wildlife species. The destruction of adjacent vegetation and the construction of impervious surfaces increase the amount of stormwater runoff and decrease the natural capacity of the wetland to handle water volumes, runoff speed, and pollutants.

Additionally, changing the topography of the site surrounding the wetland affects the direction of stormwater runoff and can lead to either increased or decreased amounts of water reaching the wetland. An increase in stormwater runoff may overburden the ability of the wetland to deal with floodwater and pollutants by continually inundating it. Conversely, reduced stormwater runoff may affect the hydrologic functions of a wetland and threaten its continued existence. Even if the topography of surrounding sites remains unaltered, a wetland may still have its hydrologic functions affected by the increased impervious surfaces and stormwater channeling.

Lakes and Ponds

Lakes and ponds function in a similar manner to wetlands. Whether natural or manmade, ponds 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.

Watercourses and Streams

Watercourses and streams are critical not only as important natural features of the environment but also for the role that they play in stormwater management, erosion control and maintaining water quality. Wildlife are also highly dependent on them to provide a pure and reliable water source and the quality of streams and watercourses has an important impact on the overall health of local habitats.

Riparian woodlands, in particular, play a major role in maintaining the vitality of watercourses. They provide shade and organic matter to support aquatic organisms that are the base of the food web in many habitats. They help to stabilize stream banks, moderate flooding, and filter out pollutants from runoff. Such woodlands can also be an important component of the habitat of local animal populations.

Steep Slopes

Topography can have a profound influence on development capacity, stormwater runoff, and site erodibility. Nearly all of the steeply sloping areas in the Jointure, are located either along stream corridors or on Jericho Mountain. The Delaware River, the Neshaminy Creek, and all other streams are defined by steep slopes along much of their length.

Development on steep slopes accelerates erosion by removing or disturbing the established groundcover and topsoil. Removal of the vegetation destroys the groundcover that absorbs rainwater, anchors soil, and buffers or dissipates the impact of rainfall on topsoil. Erosion produces sediment that pollutes surface water. Over time, accumulated sediments narrow stream channels and fill ponds. This process restricts the capacity of waterways to handle flood flows and increases the incidence and severity of flooding.

Woodlands

Over the course of the region's agricultural history, most tillable land was cleared of vegetation and plowed under. Where the land was not suitable for cultivation because it was excessively wet, rocky, or steep, the forests were harvested from time to time, but not cleared. Today, most of the woodland areas are still located in areas that were never suitable for farming. The largest contiguous forest is Jericho Mountain. In other areas, forest cover extends in predominately linear patterns along fields, ridges, and stream beds.

In all these areas, woodlands provide numerous important functions in natural cycles and processes. Woodlands provide shelter for wildlife, play an important role in the oxygen, carbon, and nitrogen cycles, and most significantly, reduce erosion and sedimentation in the area's streams. The vegetative cover softens the impact of falling rain, facilitates groundwater recharge, and reduces the volume and rate of runoff. Woodlands also play a role in filtering air pollutants and in moderating microclimates. Woodlands moderate environmental conditions, support wildlife, and provide recreational opportunities. Trees also provide an important scenic element in the landscape.

The loss of woodland areas is both a local and regional concern, as demonstrated by a 2003 study conducted by the United States Department of Agriculture Forest Service, American Forests, Inc., and the Pennsylvania Department of Conservation and Natural Resources. That study estimated that the five-county Philadelphia region lost 8 percent of heavy tree cover (approximately 34,000 acres) in a 15 year period. It also noted that lost woodland areas imposed costs on municipalities and homeowners due to increased stormwater runoff, lower air quality, higher energy costs and a general decline in the quality of life in the region.

Woodlands are most clearly threatened by their removal for site development. But other site preparation and construction practices can have significant impacts on woodlands. Although a required area to be protected may be shown on a development plan, damage to roots from machinery, grade changes affecting root stability and aeration, soil compaction from temporary roads, and materials stockpiling can result in the loss of woodlands in a few years.

In addition to protection of existing woodlands, landscaping for future generations and the planting of trees in environmentally sensitive areas is also important to communities. The reforestation of riparian areas can provide numerous environmental benefits for watercourses and the land directly adjacent to them. A mix of native plants is preferred to planting a single type of vegetation or the use of berms as a buffering method.

Prime Agricultural Soils

The Natural Resources Conservation Service (NRCS) (formerly United States Soil Conservation Service) provides a classification system for the identification of prime agricultural soils. Bucks County soils were recently recertified by the NRCS and include soil Classes 1 through 4. These soils have been determined to be potentially the most productive for a wide range of field crops, with the least risk of damage when properly managed. Prime agricultural land is generally more productive than other land under the same management practices. The survey assesses farmland based upon soil quality, climate, and soil acidity. There are two major classifications as follows:

- *Prime Farmland*—Land best suited for producing food, feed, forage, and oilseed crops. The soil quality, growing season, and moisture supply present are able to sustain high yields for crops economically when managed with modern farming methods. There are limited types of soils that qualify as prime farmland, but they primarily consist of Capability Classes 1 and 2 soils.
- Additional Farmland of Statewide Importance—Land that is of statewide importance for the production of food, feed, forage, and oilseed crops. The appropriate state agency is authorized to define and delineate this farmland. Typically, in the Commonwealth, land that qualifies as Capability Class 2 and 3 soils that do not qualify as prime farmland is designated as additional farmland of statewide importance. In Bucks County, based upon the list of soils that qualify, the majority are soil Class 3.

The primary crops within the Newtown Area include corn, numerous hay crops, small grains, soybeans, and truck crops.

The number of farms and the amount of acreage devoted to agriculture has been declining. The most productive lands primarily are located in those areas of Upper Makefield and Newtown townships that are being developed most rapidly.

Natural Resource Protection Standards

The Joint Municipal Zoning Ordinance protects the area's natural resources and features using the following encroachment standards:

- 1. Floodplains. No development, use or activity, which would cause an increase in the 100-year flood shall be permitted. Permitted uses are limited to agricultural uses, recreational uses and activities, accessory residential uses, such as yards and gardens, and accessory commercial uses, such as yards and pervious parking areas.
- 2. Floodplain (Alluvial) Soils. In areas of any municipality where no detailed flood profiles or elevations have been provided by the Flood Insurance Study, the floodplain district shall include the approximate 100-year flood boundary as shown on the Flood Insurance Rate Map and land areas containing soil characteristics indicative of flooding conditions. In these undesignated areas the floodplain soils shall be subject to the floodplain district regulations. Any property owner who is aggrieved by the determination of the floodplain based on the approximated floodplain and floodplain soils, may submit a floodplain study for a 100-year flood conducted in accordance with the standards of FEMA. The municipality for which the study is submitted may, at its sole discretion, reject or adopt the study.
- 3. Wetlands. Wetlands shall not be shall not be developed, filled, piped, or diverted. Protection standard: 100 percent.

The Jointure has no provisions for wetland buffers. The Jointure should consider the establishment of such a buffer zone around wetlands that allow only a minimum disturbance within this area. Wetland buffers help protect wetlands from the indirect and secondary impacts of grading, changes in hydrology, and loss of protective vegetation.

- 4. Lakes and Ponds. Lakes and ponds shall not be developed, filled, piped, or diverted. Protection standard: 100 percent.
- 5. Riparian Buffer Overlay Zone. A riparian buffer zone is the normally vegetated or wooded area occurring along a streamside. Generally, the larger the buffer, the more it is able to protect the watercourse and species that depend on it. The Jointure regulates riparian buffers using two zones. Zone One (which encompasses the first 25 feet from the top of the streambank) prohibits all structures, land disturbances, or uses, except for selective tree removal, unpaved trails, fishing areas, wildlife sanctuaries, creation of solar access, and customary agricultural practices. Crossings of utilities, railroads, and roads are permitted by conditional use approval. Zone Two (which begins at the outer edge of Zone One and encompasses the next 25 feet) permits all uses permitted in Zone One, the reconstruction of nonconforming buildings, residential accessory

structures and recreational uses by special exception, and dams, culverts, bridges, roads, stormwater basins, and utility crossings by conditional use approval. Conditional and special exception uses are permitted in Zone Two on the condition that applicants demonstrate that there is insufficient room or no reasonable alternative outside the buffer to accommodate the use.

- 6. Steep Slopes. Standards for regrading or development in steep slope areas depend on the severity of the slope. In steep slope areas of 15 to 25 percent regrading or development is limited to 25 percent of such areas. In steep slope areas of 25 percent or greater, not more than 15 percent of such areas may be developed or regraded. Some municipalities also limit development in areas of 8 to 15 percent slopes, providing additional protection against the effects of erosion. The Jointure should consider adding this resource protection standard to the zoning ordinance. Protection standard: slopes 15 to 25 percent 75 percent; slopes 25 percent or steeper– 85 percent.
- 7. Woodlands. Wooded areas greater than ¹/₄ acre are subject to the following restrictions: Intrusion and development is limited to 15 percent in areas zoned Jericho Mountain (JM), Conservation Management (CM) and Country Residential-1 (CR-1). In other zoning districts, intrusion and development is limited to 50 percent.

Protection standard: JM, CM and CR-1 zoning districts - 85 percent; other zoning districts - 50 percent.

The zoning ordinance also requires the protection of individual trees on wooded lots. Trees that are to be saved are required to be shown on the site plan, as are the tree protection boundary and methods used to protect the trees during construction. In connection with any land development, permits are required to remove any live tree with a girth greater than 10 inches at 4 feet above grade. Tree protection zones, 15 feet from the base of the trunk or from the trunk to the dripline, whichever is greater, are required to be placed around trees that are to be preserved. However, the ordinance also contains a provision that allows 1/3 of the roots of such trees to be disturbed by the removal of topsoil and the effects of filling, which conflicts with the ordinance's tree protection requirement. This inconsistency in the ordinance should be resolved. In addition, the provision that tree protection measures be taken only on wooded lots.

The zoning ordinance has no requirements for tree replacement. Upper Makefield Township's subdivision and land development ordinance states that trees of a diameter of 6 inches or more which are to be removed or destroyed during any stage of development shall be replaced with trees of a type specified by the ordinance. The larger the tree that is to be removed, the more replacement trees are required. The Jointure should consider adopting this or similar provisions as zoning or subdivision and land development ordinance requirements.

To prevent the cutting of trees to reduce the requirement to protect woodland resources in anticipation of a subdivision or land development, an agreement should be required to be signed and recorded that no cutting or clearing shall be considered to reduce the area of forest for any subdivision or land development. Further, the cutting of trees that is initiated two years or less before the submission of plans for subdivision or land development should be presumed to be in anticipation of development. Woodland protection standards would then be applied to the property as it existed before the removal of trees or grading. Forest removal beyond the limits set in the resource protection requirements of the zoning ordinance would require the replacement of trees based on the number and size of trees or forest removed.

8. Prime Agricultural Soils. Protection for prime agricultural soils applies to all residential uses in the Conservation Management District. Intrusion and development is limited to 25 percent of Class I, II, and III Prime Farmland and/or Additional Farmland of Statewide Importance. Protection standard: 75 percent

Significant Natural Areas

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

Based upon detailed aerial and field surveys, the analysis and evaluation resulted in four levels of importance. In the entire county, there were 240 total sites considered in the survey, and 118 were included in the final list. Some sites are significant in size while others are small tracts. In general, small isolated sites, which, for instance, may have contained remnant populations of rare species, were not included because they are not part of a sustainable natural community or system.

The following were identified as Priority 2, 3, and 4 sites in Wrightstown and Upper Makefield townships; no sites were identified in Newtown Township and no Priority 1 sites were found in the three townships. In Wrightstown Township the lone

Priority 2 site consists of the Forks of the Neshaminy. In Upper Makefield Township Priority 3 sites include Bowman's Hill and Pidcock Creek, Delaware Canal State Park Ellisia Site, Jericho Mountain, Scudders Falls Islands, and Timber Knolls Wetlands. The Priority 4 site in Upper Makefield is Washington Crossing – Marazzo Tract. Of these sites, about 48 acres of the Timber Knolls Wetlands have been preserved. Several other sites are located within the boundaries of state parks and preserves. The Jointure should ensure that priority sites are shown on future subdivision and land development plans (where applicable) to help protect and mitigate impacts on these important local resources.

Bowmans Hill and Tyler State Park are featured areas in *Natural Bucks County: Guide to Public Natural Areas*, a guide to publicly accessible natural areas in Bucks County. The guide describes the location and amenities of these areas, highlighting rare plants and animals and unique geological features.

The natural resources of Jericho Mountain were identified in the "Environmental Assessment of Jericho Mountain" by Roy F. Weston, Inc., Environmental Consultants. The mountain's numerous critical resources with severe limitations to development, as well as its unique aesthetic and historic significance, has warranted its designation as a special zoning district with development standards which will help ensure the preservation of the area's fragile ecology. The Jericho Mountain district contains standards which limit impervious surfaces to 5 percent of the site, prohibit development on slopes of more than 15 percent, and mandate open spaces for single-family cluster subdivisions.

Delaware River Wild and Scenic River Study

The Delaware River segment of Upper Makefield Township is part of the overall Lower Delaware Wild and Scenic River designation. The National Wild and Scenic Rivers Act was created by Congress in 1968 and the program is run by the National Park Service. The purpose and policy of the designation is "that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

The Wild and Scenic River designation does not add an additional regulatory burden to landowners or open private lands to public use. The designation does require a special review of federal actions or projects proposed within so many feet of the river or creek bank.

A management plan for the designated area, the Lower Delaware River Management Plan, has been developed with several goals in mind: maintain and improve water quality, preserve and protect natural resources, preserve and protect the character of historic resources, identify ways of minimizing the adverse development impacts, and preserve open space. Each of these goals has associated implementation strategies, many of which have already been carried out by the Jointure. For example, the Joint Municipal Zoning Ordinance regulates development within floodplains and riparian areas and requires that stormwater runoff be controlled to limit downstream flooding and water quality impacts.

Middle Delaware River Conservation Plan

The purpose of the Middle Delaware River Conservation Plan (March 2004) is to provide a comprehensive intermunicipal approach to improving, conserving, and making better use of the river's resources and surrounding land. The Middle Delaware River Conservation Plan is prepared under the Pennsylvania Rivers Conservation Program. It focuses on a smaller segment of the Lower Delaware Scenic and Recreational River and is limited to the Pennsylvania side of the Delaware River. This planning effort is not intended to be duplicative, but rather builds upon and incorporates information from the previous studies and focuses on the development of conservation goals and specific management options to further protect the study area's resources.

Administered by the Bureau of Recreation and Conservation of the Pennsylvania Department of Conservation and Natural Resources (DCNR), the Pennsylvania Rivers Conservation Program has been developed to conserve and enhance river resources through preparation and accomplishment of locally initiated plans. The program provides technical and financial assistance to municipalities and river support groups to carry out planning, implementation, acquisition, and development activities.

The Pennsylvania Rivers Conservation Registry promotes river conservation and recognizes rivers or river segments in communities that have completed river conservation plans. The registry also is an avenue to endorse local initiatives by binding them together in a statewide recognition program. In order for a river to be placed on the registry, it must have an approved plan and local municipal support. Registry status must be achieved to qualify for implementation, development or acquisition grants.

Municipalities within the Middle Delaware River Study Area, including Upper Makefield Township, are now eligible for DCNR funding under the Community Conservation Partnership Program (C2P2), Rivers Conservation Program for certain acquisition and development projects on a 50-50 cost sharing basis.

Groundwater

The availability of future sources of groundwater may prove to be one of the most critical limiting factors in future land use planning. For example, in this and other comprehensive plans, portions of the Jointure designated Conservation Management Areas are reserved for low intensity uses in order to provide for groundwater recharge. Availability is determined by major aquifer formations which underlie the area. Each of these aquifers is characterized by unique geological characteristics that determine water yielding capabilities. Within the entire Jointure, a full range of water yields can be expected, including some of the very highest in the entire county, as well as some of the very lowest. Where water yield is low, the total number and spacing of wells is crucial. Even in areas of adequate groundwater yield, the variability of the aquifer might mean that landowners may not be able to obtain sufficient on-site water supplies. The following geologic formations determine groundwater yields within the three-municipality region.

- Unconsolidated Sands and Gravels—This formation is limited to a narrow band along the Delaware River in Upper Makefield. This formation generally yields good to excellent supplies of groundwater. The highly porous nature of this aquifer also poses a high risk of contamination due to rapid percolation of septic systems and sources of pollution. This formation is principally located between Taylorsville Road and the Delaware River.
- Stockton Formation—Contained in a broad band that runs east and west through the southern half of Newtown Township, this formation is recognized for its generally good water yields. Here, groundwater is contained in intergranular openings within the rock where cementing material has been removed by weathering.

The Stockton formation is perhaps the best source of groundwater within the study area, and it is also the most developed. While groundwater yields can be expected to support continued moderate growth in this area, there may not be sufficient quantities to support development in other portions of the Newtown Area, underlain by poor yielding aquifers. The wells that supply water for the Newtown Artesian Water Company are located within this formation.

- Brunswick Formation—This moderate yielding aquifer extends throughout most of Upper Makefield and western Wrightstown Township. Water yield can vary widely with in this formation as it is closely related to the fractured pattern of the shale rock. Due to its unpredictable permeability, groundwater recharge may be a critical limiting factor for development within this formation. A typical well may have a relatively high yield when drilled, but may decline as the water table in the immediate vicinity is diminished. This situation may be compounded when several wells in close proximity are tapping the same aquifer. This area may be expected to support additional development with careful planning.
- Lockatong Formation—This formation is contained in a band which extends through the northern portion of Newtown Township and the western half of Wrightstown Township. Composed of rather fine grained tightly cemented sediment, this formation is characterized by a gray to black shale, the object of quarry operations in Wrightstown Township. This nonporous rock formation is capable of transmitting water only where it has been faulted or jointed and exposed to weathering. Groundwater occurs under water table conditions in these

secondary openings as far down as the base of the weather zone. The capacity of the Lockatong formation to store and transmit water is very low.

The location of this formation on the fringe of rapidly developing areas in Newtown Township suggests a natural constraint to continued intensive development in this area.

• Diabase Formation—Jericho Mountain is the only portion of the area where this very dense crystalline formation may be found. Relatively impervious to water, this rock structure is the poorest aquifer in Bucks County. All groundwater within Diabase structures is limited to the weathered zone near the land surface where faults and jointing have been enlarged by frost actions, and to a lesser extent, by the roots of vegetation. The extremely limited capacity of Diabase to store and transmit water suggests that future development in the vicinity of Jericho Mountain should be carefully limited.

Two hydrologic studies have been conducted within the Jointure. The first was commissioned by Upper Makefield Township to assess the availability and quality of the groundwater within the Township. The second was a joint study of a consortium of townships including Wrightstown Township. No comprehensive study of the entire Jointure's groundwater has thus far been undertaken. This plan recommends that such a study be considered to understand the hydrology of the area. This is especially important for areas of the Jointure that rely on low-yield aquifers for the supply of water and for areas that may be susceptible to groundwater contamination. A recent water resources planning effort in the Pennridge region could serve as a model for a future planning effort in the Newtown Area. The Water Supply chapter of this plan will provide further details on water supply issues and planning.

Soils

There are four areas within the Jointure that have some distinctive soil characteristics.

- 1. Nearly level to gently sloping, well drained soils, such as Alton and Delaware, located along the Delaware River in Upper Makefield.
- 2. Nearly level to sloping, moderately well drained types of soil like Lansdale and Lawrenceville, which are generally located in the southern portion of Newtown Township, including all of Newtown Borough.
- 3. Nearly level to sloping, moderately deep and somewhat poorly drained soils, such as Abbotstown, Readington, and Reaville soils, extending in a wide band through the area covering northern Newtown Township and large areas of Upper Makefield and Wrightstown townships.
- 4. Moderately steep, poorly drained soils, such as Towhee, Neshaminy, and Mount Lucas, limited to the immediate vicinity of Jericho Mountain.

Each of these areas and their associated soil characteristics will affect a site's suitability for supporting both conventional septic systems and land application systems (e.g., spray irrigation).

Deer and Goose Populations

Many areas of Bucks County, including communities in the Jointure, experience problems stemming from the large numbers of deer and Canada geese which have found welcoming habitats in the suburbs. Deer overpopulation often causes overgrazing of natural vegetation and the destruction of cultivated plants. The destruction of young trees and understory plants can lead to forest degradation. A single goose can produce one to two pounds of droppings per day; whole flocks can have a detrimental effect on water quality and the nutrients found in the droppings can foster algae blooms and excessive plant growth that chokes the life of a lake or pond. Flocks also feed on farm crops and pasture areas, which can result in environmental damage or economic losses to the landowner.

Municipalities can develop policies and regulations that encourage the planting of vegetation that is less attractive to deer and that discourage purposeful feeding of the deer by residents. Discouraging feeding, encouraging the planting of shoreline vegetation that restricts access to the water bodies that the geese prefer, and allowing lakes and ponds to freeze over are among the techniques that can help discourage Canada geese from taking up year-round residence on a particular site.

Historic Resources

The historic buildings, structures, and sites that can be found throughout the Jointure serve as important artifacts that highlight the historical importance of this region and serve as a reminder of its past. They are an integral component of the fabric of the community and contribute to its character. They serve as an important resource both for residents living in the area and for visitors seeking to understand and experience its past and its present. To keep these resources safe for the future, a comprehensive plan must provide for their protection and preservation.

Archaeological Resources and Native American Settlement in the Jointure

The Native American heritage of Bucks County traces its roots back 10,000 years, following the glacial period. The last of the Native American cultures to inhabit the Delaware Valley was the Lenape. It is estimated that during William Penn's lifetime there were between 10,000 and 12,000 Lenape in the Delaware Valley in villages along the Delaware River and its tributaries. Almost all Native American archaeological sites from the Late Woodland Period (500–1500 A.D.) and the time of first contact with European settlers are found on river flats and slightly elevated areas of generally low ground. By the middle of the 18th century the Lenape generally no longer inhabited the region.

The Pennsylvania Museum and Historical Commission (PHMC) maintains information on the archaeological resources of the Commonwealth and the appropriate measures to preserve them. Applicants seeking approval for proposed sewage facilities are required to notify the PHMC and to request an evaluation of a project's potential effect on historic and archaeological resources. Applicants who find archaeological resources during construction are required to halt work in order allow the Bureau of Historic Preservation to evaluate those resources and, in some cases, they are required to submit a mitigation plan to protect important resources on the site.

Historic Resources

A variety of historic designations exist at the federal and state level. At the federal level, the National Park Service is responsible for the identification and preservation of historic resources. Such resources achieve the status of National Historic Landmarks, are listed on the National Register of Historic Places or are certified as eligible for listing on the National Register. In Pennsylvania municipal governments, with the support and approval of the Pennsylvania Historical and Museum Commission, can establish historic districts in their communities.

National Historic Landmarks

The National Park Service describes National Historic Landmarks as resources that evoke the "common bond between all Americans" and "have meaning to all Americans." Less than 2,500 sites nationwide have been given this designation by the Park Service. Portions of two such sites are located within the Jointure. Washington Crossing and Washington Crossing State Park—On December 25, 1776 George Washington and his army of approximately 2,400 soldiers crossed the Delaware River and successfully attacked a Hessian garrison at Trenton, New Jersey. The victory revived American efforts to continue the Revolution after a series of defeats, including the loss of New York City, in the months prior to the battle. The site of the crossing is a National Historic Landmark. Washington Crossing State Park consists of approximately 500 acres, including 13 historic buildings and the Bowman's Hill Wildflower Preserve.

Delaware Canal and Delaware Canal State Park—The Delaware Canal is the only continuously intact canal that remains from the early- to mid-19th century when canal building was at its zenith. Canals played a critical role in transforming the United States from an agricultural to an industrial society. The Delaware Canal played an important role in transporting anthracite coal from the Upper Lehigh Valley to Philadelphia and other cities on the eastern seaboard. A portion of the canal runs through Upper Makefield Township.

National Register of Historic Places

Listed Properties

The National Register of Historic Places is the "official list of cultural resources worthy of preservation" and "part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources." Historic sites in the Jointure include resources listed as historic districts and as historic properties.

Six historic districts are located either in part or in their entirety in the municipalities of the Jointure.

| Newtown Township | 1. Newtown Historic District |
|--------------------------|---|
| Upper Makefield Township | Brownsburg Village Historic District Buckmanville Historic District Dolington Village Historic District |
| Wrightstown Township | Penns Park Historic District Wycombe Village Historic District |

Nineteen properties are on the National Register.

| Newtown Township | 1. David Leedom Farm |
|------------------|--------------------------------|
| - | 2. Newtown Creek Bridge |
| | 3. Newtown Presbyterian Church |
| | 4. Peter Taylor Farmstead |
| | 5. Twining Farm |
| | 6. George F. Tyler Mansion |

| Upper Makefield Township | John Burroughs Homestead John Chapman House Eagle Tavern Hayhurst Farm Keith House Makefield Meeting Smith Family Farmstead |
|--------------------------|--|
| Wrightstown Township | Penns Park General Store Complex William Smith House Vansant Farmhouse Waldenmark Isaiah Warner farmstead Wrightstown Friends Meeting Complex |

Eligible Properties

The first step in having a property placed on the National Register of Historic Places is for the Pennsylvania Historical and Museum Commission to determine that the property is eligible for inclusion. There are currently two historic districts (Core Creek Historic District and Wrightstown Historic District) and 20 properties that have been granted eligible status by the PHMC throughout the Jointure.

Act 167 Historic Districts

In the Commonwealth of Pennsylvania, the Historic District Act of 1961 permits municipal governments to establish historic districts for the purposes of protecting historic resources and regulating the appearance of historic areas. Three state historic districts have been established in the Jointure.

| Newtown Township | 1. Sycamore Street Historic District |
|--------------------------|---|
| Upper Makefield Township | Village of Brownsburg Historic District Village of Dolington Historic District |

Other Historic Resources

In addition to the structures, sites, and districts noted above, a variety of other resources have been identified and documented throughout the Jointure. Various sources and surveys exist to identify potentially valuable historic sites that have not received official federal or state recognition but are still worthy of protection and preservation. For example, the Pennsylvania Historical and Museum Commission maintains a Pennsylvania Historic Resource Inventory with over 115,000 listings. Structures with architectural or historic significance are also listed on the Bucks County Register. Information provided by the Heritage Conservancy indicates that surveys of historic properties have been completed in all three townships. The open space plans for each community, in particular the *Plan to Preserve Upper Makefield Township's Farmland and Open Space* (June 1998), provide some documentation of historic resources in each

community. Other studies, such as the *Delaware Canal Master Plan* (July 1987) and the *Swamp Road Engineering Study* (May 2002) provide information for selected areas of the Jointure. As an initial step in its efforts to preserve historic structures and sites, the Jointure should consider developing a comprehensive catalogue and database of all resources found in the community based on the information provided by the numerous studies, reports and listings that have been prepared in the past to chronicle such resources. After such information is compiled, a determination can be made regarding the necessity of conducting additional studies to update or supplement that information.

Methods of Preservation

From a planning perspective, these sites and structures are important resources whose preservation should be ensured. A variety of means and measures are available to recognize and protect such resources. The Jointure has already utilized some of these measures in the past in its efforts to document and safeguard the historic features of the community and should continue the use of such measures. Other planning techniques and strategies may also be available and should be considered in the future.

National Historic Landmarks

Studies particular to the National Historic Landmarks in the Jointure have been conducted in the past or are currently underway. Preservation efforts in the area of the Delaware Canal should be conducted in accordance with the recommendations of the *Delaware Canal Master Plan* (July 1987). The Jointure may wish to determine whether any of the elements of the plan needs to be updated. Upper Makefield Township is currently engaged in a project to evaluate Washington Crossing and to develop recommendations to improve roadway safety and to encourage streetscape improvements that will enhance the area. Efforts should continue to enhance the area surrounding this landmark based on the current and future recommendations produced by that project.

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 in no way provides protection from the potential alteration, redevelopment, or demolition of historic structures unless there is some federal involvement in a proposed project. However, grants may be available for properties deemed eligible for the Register or included within the boundaries of a historic district so designated. 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.

Listing

In order 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 supplied for determinations of eligibility. It should be noted that the support of residents is crucial for the historic district applications.

Listing, as with eligibility, does not affect the rights of properties owners and does not protect the buildings and structures from alteration, redevelopment, or demolition unless federal permits or funding are involved. Listed districts can receive federal historic preservation funding (when available; currently funding is not available) and tax credits for rehabilitation. The area in which the resource is located and the Jointure as a whole 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.

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. It calls for the establishment of a Historic Architectural Review Board (HARB) that advises the governing body as to whether to issue a Certificate of Appropriateness for construction and renovations in the historic district. The level of regulation which 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.

To establish such a historic district, the PHMC must certify the historic significance of the district. The PHMC recommends that a municipality interested in regulating a historic district in this fashion contact them early in the process for advice and consultation. Local governments must submit a Pennsylvania Historic Resource Survey Form, a copy of the historic district ordinance as approved by the local governing body and other documentation including a map and written description of the proposed district before it can be approved by the PHMC. The two villages (the Core Creek Historic District in Newtown Township and the Wrightstown Historic District in Wrightstown Township) deemed eligible for listing on the National Register might also be suitable for inclusion in this program, if the municipalities in which they are located wish to provide added protection for their resources.

Certified Local Government

Local governments that establish such historic districts can eventually receive designation as a Certified Local Government from the PHMC under the provisions of the National Historic Preservation Act. In order to participate in this program, townships need to meet certain other criteria, including continuing training in historic preservation by members of Historic Architectural Review Boards and historical commissions, efforts by the governing body to appoint HARB members with professional qualifications and historic preservation backgrounds, the submission of an annual report of the township's historic preservation efforts, and effective enforcement of the historic district ordinance. 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. Upper Makefield Township is the only Jointure municipality that is a Certified Local Government.

Act 247—Historic Preservation Zoning

Historic resources can also be protecting through the zoning power granted municipalities by Act 247, the Pennsylvania Municipalities Planning Code (MPC). Since the last update of this plan, Acts 67 and 68 of 2000 amended Article 6, Section 603(b)(5) to allow zoning ordinances to protect historic resources. A new Section 603(g)(2) of the MPC states that zoning ordinances "shall provide" for the protection of historic features and resources. 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.

At the present time the *Newtown Area Joint Municipal Zoning Ordinance* includes some regulations specifically geared towards protecting historic buildings and districts, but not extensive controls related to historic preservation. Article VIII regulates the placement of microwave antennae on historic buildings. Article IX provides provisions regarding historic structures in floodplains. Article XI governs signs in historic districts. Article XIV provides regulation and procedures for demolition permits involving historic structures. Portions of most of the historic villages are located in the VR-1 Village Residential/Low Density District, although portions of these villages are located in a variety of other zoning districts. The Sycamore Street Historic District is largely located in the TC Town Commercial District.

Regulations governing the zoning districts in which resources are located should promote the preservation of individual historic structures and the character of historic districts. Conflicts can arise between zoning and preservation in areas involving the regulation of off-street parking, setback requirements, and other design features. Zoning regulations can allow for the adaptive reuse and redevelopment of properties within a historic district so that newer structures complement the appearance of the village and remodeled buildings preserve the characteristics that make them historically significant. Such regulations also can permit a mix of residential, commercial and other uses when such combinations of uses are appropriate.

Zoning districts can be specifically designed to preserve historic villages and other areas or to protect individual historic structures. Conventional zoning districts could encompass a particular area and provide use and dimensional regulations suited to the particular needs of that community. Overlay districts may be more effective or appropriate for resources that are scattered throughout the area. They can be employed to prevent the demolition and control the rehabilitation of structures of a certain age or with other particular characteristics; at the same time the requirements of the particular districts in which such resources are located remain in effect. Overlay districts can also be used to preserve the viewsheds of historic districts or to ensure that adjacent new construction is designed and scaled to blend in with the features of a historic village. Some communities require additional buffering along scenic roads or in areas adjacent to villages.

The use of zoning to protect historic buildings, areas and structures, however, requires investigation into the location, amount and types of resources found in the community, the development of standards and regulations that adequately protect those resources, and the acceptance by the community of these varieties of land use controls.

Historic Marker Program

Some historic resources can be memorialized with a historical marker through the Historical Marker Program of the PHMC. Any individual or group may nominate a structure or site for such a commemoration. If the independent panel designated by the PHMC approves the marker, the nominator must submit a request for grant funding for approximately half of the cost of the monument's manufacture and designate a nonprofit organization as a sponsor who will provide funding for the remaining costs of manufacture. The staff of the PHMC assists nominators and sponsors with composing the text to be inscribed on marker, finding a suitable location for it, and planning the dedication ceremonies. The sponsor is ultimately responsible, however, for obtaining all necessary permissions to erect the monument, for installing the marker, and for arranging the dedication ceremonies. Once erected, the Commission takes ownership of the monument and assumes all responsibility for its maintenance.

Village Planning and Preservation

There are still over one hundred identifiable villages remaining in Bucks County, but many have been lost or overshadowed by growth and development. Historic villages are a unique resource, and once they are lost are irreplaceable. The villages within the Newtown Area represent an important part of the area's culture and heritage. The history of the area is manifested through these small settlements in many ways. Several villages like Wycombe, Brownsburg, and Dolington contain excellent examples of 18th and 19th century architecture. Villages along historic transportation routes, such as a railroad line, remain as evidence of early settlement patterns in Bucks County. The character and quality of the Newtown Area would be permanently diminished if small settlements were to disappear from the landscape, becoming unidentifiable as new development and growth engulfs the village image. While municipalities cannot prevent growth, they can alleviate the effects that development can have on villages through appropriate land use policies and regulations. Additionally, residents can work together to maintain or improve the positive aspects of their village.

Village Classification

A village is generally viewed as a relatively small clustered settlement that is often dominated by older homes and structures. Frequently, the houses are spaced close together, evoking the image of the village as an identifiable place. Lots are typically small or narrow and structures have a pre-twentieth century origin. Although villages contain historic structures, the development pattern and village elements are the most significant characteristics.

Villages in Bucks County can be grouped into three basic categories: hamlets, residential villages, and commercial villages. Hamlets are the smallest type of village, consisting of a few houses located near each other, and having no commercial uses or services. A residential village is the "classic" type of village: a settlement, which is mostly residential but also contains community-related services such as a post office or church. A commercial village is often the 20th century or "motorized" version of a previously residential village. It is a settlement that is largely (and originally) residential in use, but is characterized by commercial uses or service that draw on a broader region for support (e.g., gas station, antique and furniture stores, restaurants, inns, and taverns.)

Inventory and Analysis

The Newtown Area contains a variety of villages and hamlets. There are no longer any villages present in Newtown Township; however, within Upper Makefield and Wrightstown townships, there are a total of 12 residential and commercial villages and hamlets that are identified in the Bucks County Planning Commission publication, *The Villages of Bucks County – a Guidebook*.

The areas known as Anchor and Neshaminy Cliffs contain village zoning districts, which is in designation only. Neither location exhibits characteristics that make one conjure up images of an historic village. Anchor is a place name rather than a village and

contains strip commercial uses such as the Anchor Shopping Center, auto repair shop, gas stations, and banks. Within the village zoning district, Anchor Inn was the only historic structure, but unfortunately, it burned down. A retail use (pharmacy) has been proposed to replace the inn on this site. Neshaminy Cliffs is a conventional subdivision that was constructed in the late 1920s and early '30s. Since neither area contains historic elements, municipal officials should consider conducting separate planning studies for Anchor and Neshaminy Cliffs to determine if the existing village zoning district designations are still appropriate. For instance, there may be a need to add or delete certain permitted uses, or revise the area and dimensional requirements for the respective districts.

The following provides a brief historical description and a land use and zoning analysis of the historic villages and hamlets within the Newtown Area in order to provide a better understanding of the existing context and characteristics necessary to formulate appropriate future planning policies. Future development adjacent to a village may have a negative impact on the historic resources unless appropriate village planning techniques are applied. This may be especially true for villages located adjacent to the zoning districts that are intended to accommodate the bulk of the higher density/intensity growth.¹ Municipal officials in the Jointure should determine if separate village planning studies and specific preservation techniques should be implemented in order to preserve and enhance the historic character of these resources. (For more discussion on this topic, see the Village Elements section below.)

The Villages of Upper Makefield Township

Brownsburg was originally known as Pebbletown because of the large pebbles collected from the river shore and used by nearby cities and towns for street paving. A ferry also operated near the village in its early days. The present name of Brownsburg comes from Stacy Brown, a postmaster appointed in 1827. By 1857, Brownsburg was a thriving settlement with a store, hotel, lumber mill, several shops, and approximately twenty houses. According to George MacReynolds, Brownsburg was the site of a famous shad fishery "before the river became a sewer for municipalities and industrial plants."² The old shad fishermen claimed that, by the time the shad reached Brownsburg on their spring migration up the Delaware, the fish had "purged themselves of their last salt-water taint and had acquired that delicious Delaware shad flavor that delighted epicures."³ Happily, the shad have revived since the time when they were near eradicated by pollution. The biologists who worked so hard to improve the conditions for the shad hope the Delaware River will eventually sustain a run of 500,000 fish annually.⁴

Today, Brownsburg is a residential village that contains a well-preserved core of historic structures along River Road. Zoned VR1, Village Residential 1–Low Density, Brownsburg contains residential dwellings and few vacant lots. The one large open space

¹ Zoning districts intended for higher density/intensity growth are: R1, Residential 1–Low Density, R2, Residential 2–High Density, CR1, Country Residential 1–Low Density, and CR2, Country Residential 2–Medium Density.

² Place Names of Bucks County, p.410.

³ Ibid, p.411.

⁴ Mary Blakinger, "A Phenomenon on the Delaware. Shad Begin Their Mass Migration," Bucks County Courier Times, April 18, 1986, p.1.

parcel (27.6 acres) is owned by Upper Makefield Township, and is intended to be protected in perpetuity. To the south of the village is an area zoned POS, Parks and Open Space District containing a 37.6 acre parcel owned by the township and preserved through the township open space program. The remaining areas surrounding the village are zoned CM, Conservation Management District. To the southwest and southeast of the village, are several residential subdivisions that are not in character with the village.

Dolington is a residential village located along the border with Lower Makefield Township and is one of Bucks County's locally recognized historic districts. Preservation Pennsylvania has included it on its list of most endangered historic properties, *Pennsylvania At Risk 2005*. The settlement grew slowly and, prior to 1800, Dolington contained only three houses. Two of these houses were built by Peter Dolin, for whom the village was named. The third building served as a store for 28 years and was also used as a hotel for about twenty years during the 1800's. Unfortunately for the hotel, many residents of Dolington and the surrounding countryside were Quakers and supporters of the temperance movement. The Dolington Hotel has the distinction of being the first saloon to be closed by the efforts of the Woman's Christian Temperance Union (WCTU). The saloon was closed about 1887 when the property was sold and the new owner was apparently persuaded to stop selling liquor.⁵

As Dolington grew, it became an important service center for the local farmers. Among the businesses established there were two stores, a tailoring business, a coach and wagon factory, a blacksmith shop, and a wheelwright shop. In addition, Dolington was the site of a library (est. 1816) and a school (est. 1830). The Old Dolington Library is still in existence and was recently moved to a new location at the Makefield Friends Meeting house.

Dolington currently contains about twenty to 25 single-family houses and is located in a rural setting, although the main road through the village is well traveled. The houses in Dolington are a mixture of old and new architecture and are in a variety of conditions, ranging from good to poor. Only a couple of vacant lots remain in the village.

Zoned VR1 district, Dolington is surrounded by the CM district in Upper Makefield Township and the R1, Residential Low Density District in Lower Makefield Township. Most of the surrounding land uses in Upper Makefield appear to be rural residential lots. Along the northern perimeter of the village on the west side of Dolington Road is the Dolington Tract, a portion of which is located within the VR1 district. In the second quarter of 2005, a revised preliminary plan for a 95-lot residential subdivision was submitted to the township on this site. The site is also one of a few potential locations in southeast Pennsylvania that has been short listed for the future National Veteran's Cemetery. Residents and public officials alike are concerned that inappropriate development on this site may negatively affect the historic character of Dolington. If an incompatible development (e.g., conventional subdivision) is to be constructed near the village, a significant buffer yard should be established (e.g., 100 feet minimum) that will create a physical separation and planting screen that will function to set off the village

⁵ Terry McNealy, "A Forgotten Tavern", Mercer Mosaic, July/August, Vol.2, p.15.

and may aid in preserving the village character from the encroaching incompatible development. (See Village Elements section below for further discussion on village protection and enhancement.) An example of incompatible development has already been witnessed by the construction of Dolington Estates, a conventional single-family development located directly across the municipal border in Lower Makefield Township. To the southeast of the village in Lower Makefield Township is a preserved farm (68 acres) that is owned and preserved by the township.

Taylorsville is located at the point where General Washington and his army crossed the Delaware River on Christmas Eve, 1776. The village is now usually referred to as Washington Crossing. The earliest name of the settlement was Bakers Ferry and, during the Revolution, the village was known as McConkeys Ferry. Samuel McConkey sold a large tract of land, above and adjacent to the ferry, to Benjamin Taylor in 1777. Today, this land covers all of the upper portion of Washington Crossing State Park. The village's name was changed to Taylorsville in 1829, when John Taylor was appointed as the first postmaster. The ferry continued in operation until 1835 when the Taylorsville Delaware Bridge Company finished building a covered bridge across the river. The bridge was destroyed twice by flood – once in 1841 and again in 1903. After the 1903 flood, a steel bridge replaced the wooden bridge.

Taylorsville is a large commercial village located along River Road (S.R. 32), Taylorsville Road, and Washington Crossing Road (S.R. 532). Primarily commercial in the center and residential on the outskirts, there is a variety of stores, inns, shops, banks, and offices. New suburban development surrounds Taylorsville and traffic through the village is quite heavy. Taylorsville is zoned VR1 and VC1, Village Commercial-1 and contains a mix of residential and nonresidential uses. Most of the commercial uses are located along Taylorsville and Washington Crossing roads, classified as minor arterial and minor arterial/major collector roads, respectively. Some potentially developable lands (e.g., vacant and agricultural land uses) are present within the village zoning districts, but most lots are either occupied or protected lands. A major asset of the village is its proximity to Washington Crossing State Park, which is located along the northeastern perimeter of the village; and therefore, this parkland will not be available for future development. Various higher density developments are located in the R2 and CR2 districts on the western side of Taylorsville Road. Certain vacant and rural residential parcels pose potential development opportunities in these zoning districts.

Buckmanville was once a thriving settlement and the site of several successful businesses. Commercial enterprises included a general store, blacksmith shop, plow factory, and wheelwright shop. The village is named after George Buckman, who was the owner and operator of the blacksmith shop. In 1847, Buckman agreed to manufacture a new plow which had been perfected by Benjamin Wiggins. Although the plow was said to be designed according to scientific principles and superior to existing plows, Wiggins never patented his plow design. Soon after 1847, in search of a better location, Buckman moved the plow factory to Durham Road, near the Anchor Tavern. The post office and the general store housing it burned down in 1903. Finally, all that remained of Buckmanville were a few residences.

Today, Buckmanville is a hamlet containing only a few remaining structures. It is comprised of some dwelling units and accessory structures and the Jericho Valley Community Center. This building is the former Buckmanville School, which was established by the Upper Makefield School Board in 1850. The hamlet is located entirely within the CM, Conservation Management District. Areas surrounding the hamlet consist of rural residential and agricultural uses. There have been some large conventional houses constructed just east of the intersection of Street and Lurgan roads that are out of character with the hamlet.

Woodhill is located along Eagle Road in the vicinity of its intersection with Woodhill Road. Before Woodhill was a village, the area was known as the Spread Eagle Hotel or Eagle Tavern. In 1881, a post office, using the name Makefield, was established despite the fact that no village existed at the time. Apparently, this site was chosen because of its central location for surrounding residents. The village name became Woodhill about 1896, and the post office has long since been discontinued.

Today, Woodhill is more of a hamlet consisting of a few buildings, including a few large stone houses and what appears to be a small white church converted to residential use. Some newer development is also taking place in the vicinity of Woodhill. The hamlet's hilltop location in the CM district provides the residents with a scenic view of the surrounding countryside. The surrounding area includes a rural mix of agricultural, rural residential, and vacant uses.

Jericho is a hamlet that is situated on the southeastern slope of Jericho Mountain along a scenic portion of Eagle Road. The hamlet was known as Raylmans in the mid-1800's, although the mountain was named Jericho long before the Revolutionary War. The origin of the name is not positively known; however, there was a 17th century slang term "go to Jericho" which meant to go as far away as possible. This term may have been applied to Jericho Mountain because it was the most distant northern boundary of the proprietary's territory. Another possible source of the name is the biblical Jericho of Palestine.

Located within the JM, Jericho Mountain District, the distinct boundaries of the hamlet are difficult to identify, but there are several old stone houses (and a few newer ones) which extend along Eagle Road. The area surrounding the hamlet includes agricultural and rural residential uses.

The Villages of Wrightstown Township

Penns Park is the location of the land William Penn had originally set aside for a park or town square. In 1719, the park was divided among the surrounding landowners following their complaints to the proprietary government. The village's first name was Logtown because of all the buildings there were constructed from logs. The village was known as Pennsville in 1825, but was changed to Penns Park in 1862 when a post office was established. The village has the distinction of being listed on the National Register of Historic Places and is the oldest village in the Wrightstown Township.

Penns Park is a sizable village (zoned VR1 and VC1 districts) consisting of both residential and commercial uses. There are many older homes of both Colonial and Victorian architectural styles in the village. One large stone house, which apparently had been used as an antique store, is presently a music school. In addition to the homes, the village also houses a church, gift shop, tavern, offices, and restaurant. Penns Park is almost entirely surrounded by areas zoned either CR1, which is an area intended for higher density/intensity growth for the Jointure, or RI, Rural Industrial, which permits single family detached and a wide range of nonresidential uses from commercial retail and office use to manufacturing. Over the years, conventional-style development that has been developed adjacent to the village and potential development on various vacant lot and rural residential lots may further threaten to undermine the historic character of Penns Park.

Pineville was first named The Pines because of the four pine trees which grew along the side of an old school house. The school, which was erected in 1768, was leased for one peppercorn a year. The school building was torn down over 130 years ago after having served the children of Buckingham, Wrightstown, and Upper Makefield townships for almost ninety years. Goods and services provided in Pineville have long met the needs of the surrounding community.

Today, Pineville is a residential village that is located between Buckingham and Wrightstown townships and contains a mix of residential and commercial uses. Among the commercial enterprises found there are antique shops, a tavern, a greenhouse, a lamp store, and a restaurant. Durham Road (S.R. 413) that traverses the village is heavily traveled, but the center of the village is easy to identify by the post office and tavern, at the intersection of Township Line Road and Lahaska Road. The village also contains several attractive houses, including some large Colonial stone houses. In Wrightstown Township, the village is zoned VR1 district. The area surrounding Pineville is zoned CM, Conservation Management District and is defined by the farmland and a large vacant parcel. In Buckingham, the village is zoned VC, Village Center District and is adjacent to the R-1 Residential District to the southwest and the AG-1, Agricultural District around the remaining village boundaries. The Buckingham Valley Rehabilitation Center is located along Durham Road on the northwestern side of the village. The remaining lands adjacent to the village are rural residential or agricultural uses.

Rushland was known as Sackett's Ford from 1750 to 1800. The name originated from the ford over the creek which was used to reach Joseph Sackett's store and the Rush Valley Mill. The name was changed to rush Valley for a short time when the post office was established in 1883. However, when the Northeast Pennsylvania Railroad (now the New Hope–Ivyland Rail line) came through Rushland, the railroad company named the station Kirkland in honor of the Kirk family who had donated a right-of-way through their property. The village finally became known as Rushland in 1891 because the name Kirkland was too easily confused with the Kirklyn station on the Chestern branch of the Philadelphia and Reading Railroad. Rushland is located along Swamp Road and Mill Creek. Zoned VR1, Village Residential 1–Low Density, the village contains a considerable number of businesses, including a feed mill, quarry, a Formica fabricator, a photographer, a post office, and several light manufacturing uses. The railroad station has been converted to a shop. The businesses seem to generate a considerable amount of traffic, particularly the quarry which has numerous heavy trucks coming to and from the site. The railroad opened a major industry, the stone quarry, which is still in operation. The area located to the north and east of the village is zoned Q, Quarry. The western, eastern, and southern village boundaries are adjacent to the R2, Residential 2–High Density District, which is one of the areas intended for higher density/intensity growth for the Jointure.

Wrightstown takes its name from the township. Wrightstown was the starting point of the infamous Walking Purchase of 1737. The walk was the result of a treaty between William Penn's sons and the Lenape Indians. The Penns claimed that, according to the treaty, white settlers were to be allowed to purchase land north of the Tohickon Creek. The amount of land was to be determined by the distance a man could walk in a day and a half, starting from Wrightstown. The Indians maintained that the treaty was a forgery, but were finally persuaded to agree to the walking purchase arrangements. Meanwhile, the Penns had secretly cleared a path for the walkers and even held a trial run. When the actual walk began, the pace was so fast that the Indians could barely keep up. The Indian observers eventually left in disgust at the trickery of the white men. The walk ended the next day, 67 miles later, at a point two miles east of the present day town of Jim Thorpe. The walking purchase acquired 750,000 acres of land for the white men and destroyed any remaining friendship between the Indians and the settlers. A stone marker in Wrightstown commemorates the site of this controversial walk.⁶

Wrightstown is located along a busy stretch of Durham Road (Route 413) near its intersection with Penns Park Road. The village has no distinct edges and is more commercial than residential in character. Wrightstown contains several old stone buildings. There are several commercial uses in and around the village, including a nursery, gift shops, restaurant, and store. Wrightstown is zoned VR4, Village Residential/Mixed Development. District and entirely built out with the exception of a rural residential property (14.8 acres). The area northwest of the village is zoned CR1 and is one of the areas intended for higher density/intensity growth for the Jointure. The remaining area adjacent to the village is zoned CM. The Wrightstown Friends Meeting House is located outside the designated village in the CM district. There are several agricultural uses in close proximity that, if developed, could impact the village.

Wycombe came into existence when the Northeast Pennsylvania Railroad was built through the village between 1890 and 1891. In 1891, the year the railroad reached New Hope, a post office was established in Wycombe. The villagers suggested the name "Lingohocken" for the name of the new post office; however, postal authorities rejected the name because it sounded too much like "Wingohocken," another Pennsylvania post office. Despite the rejection of the name, a Lingohocken Fire Company still exists in

⁶ Walking Purchase history from Bucks County Chronicles, Bucks County Schools, Intermediate Unite No. 22, Doylestown, PA, 1977, pp.35-38.

Wycombe. From 1890 to 1896, both the railroad station and the village were known as Walton, after an old family of that name. In 1896, the village became known as Wycombe, a common place name in Buckinghamshire, England.

Wycombe is one of the best preserved Victorian villages in Bucks County, and in 1985 was placed on the National Register of Historic Places. Sixteen buildings and structures are considered historically significant. Among these structures is the Wycombe Station (1891), the Lacey Grist Mill (1743), the Coal and Lumber Yard/Feed Mill (1927), and the Carver/Slack Farmhouse (1790). Wycombe Hall, built in 1909, was originally used as two stores and an apartment, and later as an oyster saloon and ice cream parlor. The Wycombe Independence School House was built in 1913 so that the village children could attend one school (the main street through Wycombe forms a section of the boundary between Buckingham and Wrightstown townships.) In addition, several structures were designed by the noted Doylestown architect, A. Oscar Martin.⁷

Straddling the Wrightstown and Buckingham township border, the village may still be considered a residential village, although it has a traditional nonresidential component with uses such as a church, the Wycombe Inn, and Histand's farm supply store. The village has characteristics of several settlement forms. It is elongated along Township Line Road and Mill Creek Road like a linear village. The village is centered near the train station and post office at the junctions of the railroad, Forest Grove Road, Township Line Road, and Mill Creek Road like a nodal village and crossroads village. Wycombe may have to contend with the potential issues and problems faced by the range of village forms. The zoning is VR1 and VC-1 in Wrightstown and Buckingham townships, respectively.

In 2000, the Bucks County Planning Commission assisted the Jointure with a village study for Wycombe. The primary purpose of the study is to determine if current zoning regulations and district boundaries for the village are appropriate for the existing conditions, and if the regulations are conducive for maintaining and enhancing the characteristics of a village. The study presents detailed analysis and planning for the village that can form the basis for future actions of public officials and private citizens.

Chain Bridge is an almost indiscernible hamlet located just north of where Second Street Pike crosses the Neshaminy Creek. It was named after the only chain bridge ever built in the county. The bridge was built over the Neshaminy Creek in 1809. Chain bridges, the forerunners of suspension bridges, were suspended from chains which passed over a frame tower and stone pier built in the center of the stream. The ends of the chains were anchored into the creek banks. The links in the chain varied from three to twelve feet in length. The chain bridge over the Neshaminy was destroyed by a flood in 1832.

The Chain Bridge Octagonal Schoolhouse, owned by Wrightstown Township, was one of nine octagonal schools built in Bucks County between 1800 and 1840. The eight-sided building provided abundant wall space, while maximizing efficient heating and allowing

⁷ Some information from: Mary Ann Sircely, "Wycombe on National Register of Historic Places", Daily Intelligencer, February 12, 1985

the teacher to easily control his students. The schoolhouse in Chain Bridge is still standing. The area is zoned CM, Conservation Management, and except for the schoolhouse and two other structures, the original settlement of Chain Bridge has disappeared.

Planning Policy Designations

The villages in the Newtown Area are each unique in their size, composition, and function. For planning purposes, they have been categorized based upon their composition and intended level of future growth. However, preservation and enhancement are an underlying principle for villages and hamlets in the Jointure, regardless of classification (For more on this topic see Village Elements section below.) The three primary categories are as follows: Growth Villages, Limited Growth Villages, and Hamlets.

Growth Villages

These villages contain a village zoning district (VR1, VC1, VR4 Village Residential, and VC2 Village Commercial districts) and are intended to accommodate a significant level of growth because they are located adjacent to areas zoned for higher density/intensity development. Growth Villages include Rushland, Penns Park, Wrightstown, and Taylorsville. The planning policy for these villages is to explore ways to preserve and enhance historic village character while accommodating future growth within and adjacent to the village. Permitted uses as well as area and dimensional regulations and other planning techniques should be examined to determine if they are still appropriate.

Limited Growth Villages

These villages contain an associated village zoning district (VR1, VR4, VC1, VC2 districts) and are intended to accommodate modest infill development in the future. Limited Growth Villages include Brownsburg, Dolington, Wycombe, and Pineville. While these villages are not located adjacent to areas intended for higher density/intensity growth, there is still concern with incompatible development that may overshadow or undermine their historic character. The planning policy for these villages is to maintain the current village district boundaries and to examine any and all village planning techniques (e.g., scenic overlay district, design guidelines, sidewalks) deemed necessary to preserve and enhance the village's historic character.

Hamlets

Typically, these historic settlements are very limited in area and do not contain separate village zoning districts. Hamlets include Buckmanville, Jericho, Woodhill, and Chain Bridge. Based upon field surveys, the only perceived settlement pattern of these hamlets are a few dwellings and structures, which may be what is remaining from a larger concentration of buildings that were destroyed over time. These very small settlements are particularly vulnerable to development of adjacent properties. The prescribed planning policy for a hamlet is to evaluate the feasibility of providing a village zoning district and/or overlay district to preserve or enhance the area in and around the hamlets. Development that is proposed adjacent to a hamlet should be encouraged to contain village-style form and architecture. To enhance the rural historic character, additional preservation measures may be appropriate.

Village Elements

Key factors necessary for successful village preservation and enhancement include: village entrances, village viewsheds, village district boundaries, and use and dimensional requirements. The decisions made concerning these factors along with input from a public participation process will help to establish a community vision for each of the Newtown Area's villages and hamlets. The following provides a summary of these key features. Independent study can identify specific preservation needs and appropriate regulations to incorporated into ordinance regulations.

Village Entrance

The entrance to a village is a major element in strengthening the visual identity of the village. The entrance is the perceived edge of the village, a transition point that indicates the presence of a place that is different from its surroundings. A change in land use character or in the existing character of the landscape may be a signal to motorists that they are entering a village and need to reduce speed. Typically, villages have at least one of the following characteristics that can heighten the sense of entry to a village:

- Abrupt change of land use, such as the change from open agricultural land to a tight cluster of buildings in a village;
- Change of elevation, such as the crest of a hill or a dip in the road;
- Mature trees lining the street;
- Lot size and configuration, usually small, narrow lots often in a lineal arrangement;
- Architecture—buildings of a similar architectural period, located close to road;
- Village entrance signs.

These factors would be an indicator of a change in land use or in the character of the land. However, various design and planning techniques can be used to enhance or establish an effective entrance creating an increased awareness to motorists that they are entering a small community. This can be achieved through amenities such as landscaping, lighting, and pavement detailing. In addition, since the entrance is the first image one sees when approaching a village, it will leave a lasting impression. It is important to identify these entrance features so that the entrance does not become obscured by its surroundings. The village entrance is one means of identifying the limits of a village along its main thoroughfares. Based upon a field survey, it appears that many of the existing village district zoning boundaries for the Jointure villages are consistent with the perceived entrances to the villages. In the village district boundary is larger than one or more of the perceived village entrances. Consideration may need to be given to adjust the respective zoning district boundaries accordingly.

Village Viewshed

The area immediately surrounding the village, known as the viewshed, is another important element to consider in preserving village identity. A viewshed begins at the transitional point where the built environment meets the surrounding landscape. Generally, the viewshed is determined by identifying those areas that can be seen from sites of significance in the village. The size of the viewshed varies with the specific topography, vegetation, and other structures or features of the village's surroundings.

Because the viewshed serves as a transition between the countryside and the village, it is important to minimize or discourage development that will have a negative impact on this area. Alternative types of residential development, such as clustering, that function to preserve the open space of the viewshed should be considered in this area.

Integrating or separating new development within the viewshed can help protect the existing village character. To integrate development, zoning regulations (i.e. use and dimensional requirements) should be consistent with the original village character so that new development will function as an extension of the existing village. If new development is not compatible with the existing architectural style or character of the existing village (e.g., conventional subdivision), a physical separation should be provided between the proposed development and the village so that there is adequate transitional area in the form of an open space or buffer yard. The intent is to protect the viewshed by providing required open space adjacent to the village. The placement of new structures should be sensitive to both the village and the viewshed and located in the least obtrusive areas. Performance standard subdivisions or a cluster design are techniques that can be used to retain the visual transitional area.

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

Village District Boundary

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

As discussed, the village entrance and viewshed are two effective means for identifying the limits of a village zoning district boundary. Based upon a field survey, it appears that most of the existing district boundaries for the Jointure villages correspond to their respective village entrances. However, in certain cases, there may be a need for adjustments to the village district boundaries. For instance, in the villages of Wycombe, Wrightstown, Taylorsville, and Brownsburg, the size of the village districts could potentially be reduced to correspond to the perceived village entrances. An evaluation of all villages and hamlets can be conducted to determine if a village/scenic viewshed overlay district is appropriate. These village preservation/enhancement techniques will afford greater protection from incompatible future development for these village resources and outlying areas.

Use and Dimensional Requirements

Each of the four village zoning districts permits a range of residential and nonresidential uses. Generally, the residential village zoning districts are more restrictive than the village commercial districts in terms of permitted nonresidential uses. The VR1, Village Residential 1–Low Density permits only single family detached dwelling and limited nonresidential uses such as school, hospital, and child care facility. The VR4, Village Residential/Mixed Development, and the VC1 and VC2 Village Commercial districts allow for a wider range of both residential and nonresidential uses, but the permitted uses and area and dimensional requirements may vary slightly between districts.

If the mass, scale, or nature of proposed buildings and/or uses are not compatible with those of the existing building and uses in a village, they may undermine the historic character and quality of a village. If this is the case, municipal officials may wish to eliminate those uses from the village zoning district. Conversely, adding new use(s) that encourage village-oriented development featuring compact, pedestrian-oriented, mixed-use communities should be examined and implemented where appropriate. An evaluation of the new and proposed development activity in and around the villages may prompt municipal officials to revise certain use and dimensional requirements. Integrating these elements along with the provision of public open space can help to create a sense of community and provide an opportunity for social interaction among residents. Design guidelines could be used to help guide the design and layout of proposed developments to be compatible with the prevailing village characteristics. (Sample village design guidelines are provided on the next page.)

Several other techniques can be used to preserve, protect, and enhance villages and hamlets, such as the placement of easements, a transfer of development rights (TDR) program, an historic structure demolition permit ordinance, and a site analysis and resource conservation plan. Collectively, these techniques can provide an effective multitiered approach to effective village planning.

Sample Village Design Guidelines

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

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

Parks, Recreation, and Open Space

Park, recreation, and open space resources are important parts of a community's identity and contribute to the overall quality of life. Open space contributes to a municipality's character, preserves the natural ecosystems upon which we depend, and provides an attractive setting in which to live and work. Park and recreation facilities provide an avenue for residents to interact and recreate and help create a sense of community. Parks and open space ranked among the five best characteristics of the Jointure as related by residents responding to the Newtown Area Comprehensive Plan survey.

Park and open space resources can be classified into three categories: permanently protected lands, temporarily protected lands, and unprotected lands. Permanently protected lands include areas that are more likely to be preserved due to their ownership, such as publicly owned lands (e.g., parks or vacant tracts), lands owned by nonprofit conservation organizations or homeowner's associations, and other similar lands (e.g., cemeteries). Temporarily protected lands are areas that are in open space use or partial open space use in conjunction with existing recreational facilities. However, the owner reserves the right to develop the land in the future (under the parameters of the underlying zoning). The most common temporary open space areas are lands that are enrolled in preferential tax assessment programs. Other types of temporary open space include private recreational lands (golf courses, camps and campgrounds, nature preserves) and school facilities. Unprotected lands include any vulnerable resources that do not have an inherent mechanism in place that would discourage or prevent the land from being developed or affected by development in the future. This includes a significant portion of the Jointure's existing natural, historical, cultural, and scenic resource lands.

Permanently Protected Lands¹

The following provides a brief description of all permanently protected open space lands.

State Parks

Three state parks are located in the Jointure, Tyler State Park, Washington Crossing Historic Park, and Delaware Canal State Park. Newtown Township has about 519 acres of the 1,700-acre Tyler State Park, which is located along the banks of the Neshaminy Creek. The park features numerous recreational opportunities, including boating, hiking, fishing, ice skating, disk golf, sledding, cross-country skiing, picnicking, biking, horseback riding, and nature study. Tyler is looking to add nature study programs and hopes to expand its system of trails. Links have already been established between

¹ This chapter attempts to identify and classify open space and park resources into several subcategories to provide an overview of what resources are protected and how well those resources are protected. The acreage totals provided by this chapter may not match Park, Recreation, and Open Space land use totals found in other sections. For example, cemeteries are classified as permanently protected land in this chapter but are classified as Government and Institutional land uses elsewhere. Transportation and utility lands are not inclusive of roads in this chapter but are included in the Transportation and Utilities category in other components of this Update.

Northampton and Newtown townships. The bridge reconstruction across the Neshaminy Creek on Newtown–Richboro Road—which runs adjacent to the south side of the park—will have a dedicated bike lane that will enhance the pedestrian and bicycle connections between these two townships.

Washington Crossing Historic Park, operated by the Pennsylvania Historic and Museum Commission, is located along the Delaware River in Upper Makefield Township in two sections: McConkey's Ferry and Thompson's Mill. The McConkey's Ferry section is located at the village of Taylorsville and contains about 139 acres. Amenities in this section include a visitor's center, historic buildings, and picnic pavilions. The Thompson's Mill section is located within Upper Makefield and Solebury townships. In Upper Makefield, the park contains Bowman's Tower and Wildflower Preserve on about 91 acres. The wildflower preserve features walking trails, birding opportunities, classes and guided tours, and an arboretum.

The Delaware Canal State Park is located along the Delaware River in Upper Makefield Township. The canal and towpath extend 5 miles through the township and encompass about 43 acres. A national historic landmark, the park provides opportunities for walking, biking, horseback riding, picnicking, fishing, and nature study. In 2004 and 2005 the canal sustained damage from flooding. The state is in the process of repairing the canal, towpath, and locks back to pre-flood conditions. There are no plans for new facilities.

County Park And Open Space

There are several county-owned properties in the Newtown Area. A small area of Core Creek Park, encompassing about 18 acres, is located in the southeast part of Newtown Township. The Shull Farm, located at the corner of Wrights and Linton Hill roads, is an active farm on 111 acres in Newtown Township. The historic house and barn are being restored, and the remainder of the property is rented to a farmer.

Bucks County has also acquired several properties (about 26 acres) along the Neshaminy Creek in Wrightstown Township. The Bucks County Parks and Recreation Department has been preserving property along the Neshaminy and Little Neshaminy Creek for the purpose of protecting the floodplain from future development as well as helping to implement the Heritage Conservancy's Lasting Landscapes: Forks of the Neshaminy program. This program focuses on preserving farms and natural lands near the confluence of these creeks in Warwick, Buckingham, Wrightstown, and Northampton townships. In Wrightstown Township, several properties have been identified for preservation and this includes the Priority 2 Natural Areas Inventory site, Forks of the Neshaminy.²

² Areas identified for preservation by the Heritage Conservancy program, Lasting Landscapes: Forks of the Neshaminy, encompass a larger area than the Priority 2 site, Forks of the Neshaminy, identified by the Natural Areas Inventory.

Municipal Park and Open Space

Municipal park and open space encompasses lands owned entirely by Jointure municipalities. Newtown owns about 271.5 acres of park and open space land, including lands dedicated to the township from residential developments; Wrightstown Township owns about 193.3 acres of land, and Upper Makefield Township owns about 104 acres of land. The following tables detail the name of the land or park, its location, facilities, and acreage.

| Name | Location | Facilities | Acreage |
|--------------------------------------|---------------------------------------|---|---------|
| Chandler Field | Buck Road | Ball fields | 7.1 |
| Carl Sedia Park | Buck Road | Active and Passive Recreation | 4.3 |
| Swamp Road Park | Swamp Road | Ball fields | 30.8 |
| Roberts Ridge Park | Lower Dolington Rd. and Frost Lane | Vacant | 24.8 |
| Newtown Township Nature Preserve* | Durham Road | Passive Recreation | 50.6 |
| Woll Tract | Durham Road | Undeveloped Active Recreation (future ballfields) | 37 |
| Hidden Lake** | Washington Crossing Road | Open Space | 42.9 |
| Silver Lake Park | Newtown Bypass and Campus Drive | Passive Recreation | 22.6 |
| Wiggins Tract | Washington Crossing Road | Undeveloped Active Recreation (future ballfields) | 26 |
| Pickering Chase Woodlands | Linton Hill Road | Open Space | 17 |
| Merion Parcel | Washington Crossing Road | Open Space | 8.4 |

Newtown Township Parks and Open Space

*Purchased through the Bucks County Municipal Open Space Program

**Bucks County owns easements covering 39.6 acres of this and adjacent property, including the floodplain and dam.

Wrightstown Township Parks and Open Space

| Name | Facilities | Acreage |
|----------------------------|--|---------|
| Anchor Run Farm* | Farm and passive park | 101.4 |
| Neshaminy Cliffs | Wooded lot. No plans for development at present time | 0.3 |
| Pheasant Lane Extension | Future walking trail to Anchor Run Farm | 1.1 |
| Octagonal Schoolhouse | Historic schoolhouse | 8.2 |
| Boat Ramp | Boat ramp | 1.4 |
| Chippewa Farm | Municipal complex | 62.6 |
| Smith Farm | No plans at present time. | 18.3 |

*A portion of this property was purchased through the Bucks County Municipal Open Space Program

Upper Makefield Township Parks and Open Space

| Name | Location | Facilities | Acreage |
|------------------------------------|-----------------------------------|---------------------------------|----------|
| Lookout Park | River Road | Baseball fields, walking trails | 25 |
| Brownsburg Tract | River Road | Flat fields (6) | 38 |
| Biddle Tract | Mount Airy | None | 18 |
| Mathieu | Washington Crossing Road | Open Space | 78 |
| Lehman/Merrick | Creamery Road | Open Space | 91 |
| Rapuana | 1050 Highland Road | Open Space | 260 |
| Ryan | Buckmanville Road | Open Space | 108 |
| Dudley | Eagle Road | Open Space | 85 |
| Floge | River Road | Open Space | 36 |
| Heinicke | Pineville Road | Open Space | 36 |
| Baldwin | 1212 Eagle Road | Open Space | |
| Slack | Slack Road | Open Space | 31 |
| Antrobus | 375 Thompson Mill Road | Open Space | 118 |
| Thorpe | Pineville Road | Open Space | 47 |
| Seigel | 1194 Street Road | Open Space | 133 |
| Schleyer | 58 Buckmanville Road | Open Spae | 90 |
| Russell | Wrightstown Road | Open Space | 70 |
| Marazzo | General Washington memorial Blvd. | Open Space | 82 |
| Magill/Lankas | Lurgan Road | Open Space | 22 |
| Vacant Land Washington Crossing | | | <u> </u> |

*Purchased through the Bucks County Municipal Open Space Program

Open Space within Residential Developments

The provision of open space for residential developments is regulated by the Joint Municipal Zoning Ordinance. Article IV of this ordinance provides performance standards for the provision of open space in residential developments. A minimum open space ratio is established for single-family, single-family cluster and performance subdivisions, which varies based upon the specific zoning district. Ratios vary from 10 percent for single-family detached dwellings in the R-1 Medium Density Residential District to 75 percent for single-family cluster subdivisions in the Jericho Mountain District.

Additionally, the subdivision and land development ordinance of each municipality in the Jointure requires a dedication of recreation land or a fee in lieu of such dedication that could be used for the purpose of purchasing, developing, and maintaining park and recreation land. In Wrightstown Township applicants for singlefamily detached developments are required to dedicate 1,500 square feet per dwelling unit for park and recreation areas. Single-family cluster and multifamily developments must adhere to the open space and recreation requirements of the zoning ordinance.

Upper Makefield and Newtown townships contain very similar regulations for the dedication of recreation land. In Upper Makefield applicants for single-family detached, two-family, and multifamily developments are required to dedicate 4,000 square feet per dwelling unit for park and recreation areas. In Newtown Township applicants must dedicate 3,000 square feet per dwelling for these development types. Nonresidential subdivisions and land developments in Upper Makefield Township are required to dedicate 1,300 square feet of land for every 4,000 square feet of building area. Nonresidential subdivisions and land developments in Newtown Township are required to dedicate 750 square feet of land per 1,000 square feet of building area. Suitable facilities required for nonresidential areas in Newtown and Upper Makefield include playing fields, tennis courts, tot lots, basketball courts, and jogging parks with exercise stations. Each Jointure municipality also has design requirements for locating and developing dedicated recreation areas so that such areas are usable and accessible to nearby residents.

Many residential subdivisions in the Jointure have some sort of open space associated with them. Some of this space has been dedicated to the townships; most of it remains in the hands of homeowners' associations. In Wrightstown Township, 40 acres of open space land is associated with residential subdivisions. In Upper Makefield Township, 602 acres of open space land is associated with residential subdivisions. In Newtown Township, 1,168 acres of open space land is associated with residential subdivisions. A total of 1,810 acres of land is associated with residential subdivisions in the Jointure.

Agricultural Conservation Easements

In May 1989, the Bucks County Commissioners appointed a nine-member board to develop and oversee a county farmland preservation program. The Bucks County

Agricultural Land Preservation Program (BCALPP) seeks to acquire agricultural conservation easements on viable farmland within the county.

An agricultural conservation easement secured through acquisition is a legally binding document which is filed in the land records for the deed of a farm property, restricting its use substantially to agricultural and directly associated uses. As an easement in gross, restrictions are binding upon the owners and future owners, carrying with the land. A conservation easement allows a landowner to protect his farmland for agricultural uses while retaining private ownership of the farm.

The BCALPP compensates farmers for the difference between the fair market value (development value) and the agricultural value of their land. To be eligible for this program, the following criteria must be satisfied:

- size restriction: 50 acres (minimum)
- location: within an agricultural security area
- soil criteria: at least 50 percent Class 1-4 soils
- harvest criteria: at least 50 percent harvested cropland/pastureland
- plan approval: approved U.S.D.A. Soil Conservation Plan in effect

Once a farm is accepted into the program, the property owner may sell or convey a conservation easement and receive cash for the respective development rights. The easement permanently prohibits the development of the property. As of 2003, approximately 8,014 acres of agricultural land in Bucks County (consisting of 88 farms) had been preserved through the BCALPP.

Several farms in the Jointure have participated in the program. Farms preserved in Upper Makefield Township consist of the two Gunser properties (93.1 and 131.7 acres), the Siegel property (90.9 acres), the Thorpe property (133.5 acres), the Schleyer property (70.3 acres), and the Rapuano Estate (172.8 acres). The program preserved the Trivellini property (48.1 acres) in Wrightstown Township.

Temporarily Protected Lands

The following provides a brief description of all temporarily protected open space lands.

Lands with Preferential Assessment

Numerous residents within the township have registered their properties with the county under the Pennsylvania Farmland & Forest Land Assessment Act of 1974 (Act 319). Bucks County has entered into voluntary covenants with owners who have valuable open space resources in order to preserve open space. Under this program the property, except for the portion considered part of the home site (often approximately one acre), is assessed by the county at the fair market value (or at less than its highest and best use).

As a result, the property owner is afforded a significant savings through a preferential property tax assessment as an incentive to maintain the land as open space. Act 319, also known as the "Clean and Green Act," is available to landowners for the following uses: agricultural use, agricultural preserve, and forest preserve. Enrollment in this program is continuous unless dissolved by the landowner or eligibility requirements are not met.

Lands covenanted under Acts 319 are considered only temporarily protected because the property owners have the right to terminate the agreement at any time. However, as a result, the property owner must pay a penalty in the form of rollback taxes (i.e., the difference between the preferential assessment value and the fair market or development value) and accumulated interest (7 years for Act 319). Although covenanted lands are only temporarily protected, it shows the willingness of landowners to maintain their properties in open space. Commitment into Act 319 is an example of a local grassroots action that should be considered in the overall open space planning process. In total, there are about 4,894 acres of land covenanted under Act 319 within the Jointure (854 in Newtown Township, 2,947 in Upper Makefield Township, and 1,093 in Wrightstown Township).

Agricultural Security Areas

Similar to lands covenanted under the preferential assessment programs, enrollment into an Agricultural Security Area (ASA) suggests a significant commitment by property owners for ongoing farmland preservation. The ASA program was created by the Agricultural Security Area Law (Act 43 of 1981) to protect the agricultural industry from increasing development pressure. ASAs are intended to promote permanent and viable farming operations by strengthening the farmer's sense of security in his right to farm.

For properties to be eligible for enrollment into an ASA, the aggregate total of the properties must be a minimum of 250 acres of viable farmland, and the zoning district in which these properties are located must permit agricultural uses. Individual parcels comprising a designated ASA must be at least 10 acres in area of which at least 50 percent contains Class 1–4 soils. Respective property owners must petition the township supervisors in order to gain approval into the program. Consequently, once enrolled into an ASA, farmers gain the following benefits:

- Protection from municipal nuisance ordinances which restrict odors and noise in a community;
- Protection from governmental acquisitions of land through condemnation or eminent domain; lands proposed for such action within a ASA must first be approved by Agricultural Lands Condemnation Approval Board;
- Enrollment into the county's easement purchase program requires previous establishment of properties in an ASA.

A total of 1,925 acres of farmland is enrolled into an ASA in the Newtown Area. Upper Makefield Township has 1,469 acres of farmland enrolled, Wrightstown Township has 141 acres of land enrolled, and Newtown Township has 315 acres of land enrolled.³

Public and Private Schools

The Jointure contains several private and public schools. Public schools in Newtown Township include Newtown Elementary (37 acres) on Wrights Road, Goodnoe Elementary (17.1 acres) on Frost Lane, Newtown Middle School (32.5 acres) on Richboro Road, and Council Rock Senior High School (61.8 acres) on Swamp Road. Private schools include St. Andrew Catholic School (24.1 acres) on Wrights Road and lands associated with the George School (11.2 acres) at the intersection of Newtown Pike and the Newtown Bypass. Colleges include Bucks County Community College (200 acres) on Swamp Road, Holy Family College (79.2 acres) at the intersection of Lindenhurst Road and the Newtown Bypass, and the LaSalle University Bucks County Center (6.5 acres) on University Drive. In Wrightstown Township the Wrightstown Elementary School (22.5 acres) is located along Penns Park Road. In Upper Makefield Township the Washington Crossing Christian School (2.1 acres), a private school, is located at the corner of Lord Sterling and General Sullivan roads. The Sol Feinstone Elementary School (28.2 acres), a public school, is located on Eagle Road.

Private Recreational Areas

Other types of temporary protected lands include private recreational areas, such as golf courses, camps and campgrounds, and nature preserves. Jericho National Golf Club, a private golf course and country club on 171 acres, is located along Brownsburg Road in Upper Makefield Township. In Wrightstown Township the Middletown Grange #684 (the local branch of the Pennsylvania State Grange) owns 49 acres of fairgrounds. The Grange hosts a number of events throughout the year, including the Middletown Grange Fair, dog shows, car shows, and festivals, and provides fields for the Tri-Township Baseball League. The Middletown Grange has no intention of selling this property.

Other Temporarily Protected Lands

Some parcels owned by government or quasi-government agencies also qualify as temporarily protected. The Newtown Artesian Water Company owns about 3 acres of land on Frost Lane. The main utility easement extending through Newtown and Wrightstown townships is the PECO right-of-way, which encompasses about 117 acres. SEPTA still owns railroad tracks extending through Newtown Township into Newtown Borough. The area of this right-of-way through Newtown Township is about 3.7 acres. Two other utility right-of-ways running through Newtown Township are the Sun Company Pipeline Corridor and the Transcontinental Gas Line Corridor. These utility corridors consist of easements across private lands. PECO owns the right-of-way of the New Hope and Ivyland Railroad, a portion of which runs through Wrightstown Township

³ Agricultural Security Area farms in Newtown Township are enrolled in Lower Makefield Township's Agricultural Security District.

Planning for Open Space and Park and Recreation Development

Newtown Township Comprehensive Recreation, Park, and Open Space Plan

Newtown Township completed a park and recreation plan in 1995, the *Newtown Township Comprehensive Recreation, Park, and Open Space Plan.* The plan inventories available facilities, assesses the park and recreation needs of the township, and sets out a number of general recommendations for future facilities and programs. Included in this plan is a brief community profile, an inventory of natural resources, a spatial analysis of park and recreation needs, a description of park and recreation administration and programs, and a community survey that gauges community sentiment on a variety of park and recreation issues in the township.

The plan found that, according to National Recreation and Park Association guidelines, the township would need 200 acres of developed recreation space by the year 2010. Accounting for all township-owned active recreation areas, developed (Swamp Road Park, Chandler Field, and Carl Sedia Park) and undeveloped (Woll Tract and Roberts Ridge), a deficit of 96 acres was shown for the year 2010.

A citizen survey was distributed to 4,800 households as part of the development of this plan. Residents were asked to give their opinions about a number of park and recreation issues to help shape the recommendations of the plan. The survey found:

- 32 percent of those surveyed indicated that the township needs more recreation programs and activities; 38 percent were not sure; 26 percent felt there was not need for more programs and activities.
- Music concerts, arts and crafts/hobbies, ice skating, swimming were the types of programs and activities of which the township needed more.
- The most frequently cited recreation facilities respondents would like to see more of included recreation space, bicycling trails, ice skating areas, hiking/walking trails, and swimming pools.
- 53 percent of the respondents would not support an increase in taxes to pay for more recreation programs and facilities; 20 percent said they would. Of those willing to pay more taxes, 63 percent favored active rather than passive recreation opportunities.
- Respondents said they would most frequently use the following facilities (in the order listed) if provided by the township: hiking, biking, walking, or jogging trails; swimming pools; and play areas in parks.

The plan contained several specific recommendations regarding park and recreation development:

- 1. Construct a restroom building at Swamp Road Park.
- 2. Preserve one large central open space area.
- 3. Purchase and develop the 37-acre Woll Tract.
- 4. Determine the feasibility of a large community pool.
- 5. Develop Stanford Roberts Park (Roberts Ridge) into an active recreation area.
- 6. Maintain the Park and Recreation Operating Fund.
- 7. Develop a Newtown Township linear trail system.
- 8. Determine the feasibility of a community center.

Township of Newtown: Municipal Wide Open Space Plan

In 1998 Newtown Township developed an updated open space plan to qualify for Bucks County's Municipal Open Space Program funding. This plan's process consisted of a demographic profile, a statement of goals and objectives, an inventory of existing open space resources and natural and scenic areas, an examination of potential linkages, and an evaluation of the potential acquisition of new open space parcels through a pointbased evaluation process. The plan concluded with a plan for implementation, which suggests courses of action that could be employed to carry out the plan's objectives. In 1999 Newtown Township purchased 47.8 acres on Durham Road, using a matching grant from the county's open space program.

Township Of Wrightstown, Bucks County, Pennsylvania: An Open Space Plan

Wrightstown Township also developed an open space plan in 1998 to qualify for Bucks County's Municipal Open Space Program funding. The plan used a similar process to Newtown's, providing chapters on objectives and policies, background information on the township and its setting, identification of protected land and vulnerable resources, identification of potential linkages, an analysis of unprotected resources and priorities for preservation, and plan recommendations. The implementation chapter recommends six activities, the first two of which have already been accomplished, to carry out the goals and objectives of the plan:

- 1. Acquire the Wicen Tract.
- 2. Develop a plan for the use of the Hipple-Wicen properties.
- 3. In cooperation with Newtown and Upper Makefield townships, amend the Newtown Area Joint Municipal Zoning Ordinance to provide a riparian buffer ordinance and a transferable development rights mechanisms.

- 4. Form an Agricultural Security District to protect farming practices from nuisance regulations.
- 5. Acquire additional land for open space purposes when it is financially feasible.
- 6. Cooperate with Northampton Township and Bucks County on the formation of a linked open space system along the Neshaminy Creek and work with Buckingham Township on a linked open space system along Mill Creek.

Plan to Preserve Upper Makefield Township's Farmland and Open Space

Upper Makefield Township developed an open space plan in 1998. Again, this plan used the recommended open space planning process set by the Bucks County Municipal Open Space Program. The 1998 plan established the following open space preservation goals: farmland preservation, watershed protection, establishment of greenway corridors, enhancement of biological diversity, protection of significant viewsheds, and establishment of recreational open space.

Implementation of the open space plan had already begun with the passage of the \$5.9 million Upper Makefield Open Space Bond in 1996. (Voters approved an additional \$15 million in 2000). The plan set out an acquisition strategy, which included:

- Establishment of goals, objectives, strategies, and criteria.
- Identification of key parcels.
- Negotiations for key parcels.
- Encouragement of owners to bring their properties to the EAC (Environmental Advisory Committee) for review.
- Completion of a workshop to explain to owners of large tracts the various methods of preserving land.

2005 Update

Upper Makefield Township updated its open space plan in 2005. After the success of the 1998 plan, the township thought to expand the goals and criteria for open space preservation. The 1998 plan established several open space preservation goals: farmland preservation, watershed protection, establishment of greenway corridors, enhancement of biological diversity, protection of significant viewsheds, and establishment of recreational open space. In the 2005 plan, two of these goals, watershed protection and farmland preservation, are listed as top priorities. Another major goal involved the protection of historic properties.

The 2005 update establishes a new evaluation system to provide a rational structure for the township's open space priorities. Properties are evaluated in relation to the six major goals and points are assigned on the basis of how much the property meets the characteristics of each goal category. Because of the plan's emphasis on watershed protection and farmland preservation, these categories are given greater possible point

totals. The committee also assigns other factors to potential acquisitions, including cost, accessibility, barrier potential, suitability for recreation, and availability for acquisition.

Upper Makefield Township Park And Recreation Comprehensive Plan

In 1992 Upper Makefield Township developed a park and recreation plan to plan and coordinate the current and future development of a park and recreation system. The plan consists of an inventory of existing conditions, including existing areawide recreational facilities, an analysis of park and recreation needs, and recommendations for new facilities, programs, administrative policy, and funding.

Program and facility recommendations were derived from an analysis of park and recreation needs using NRPA standards and the results of a community survey. Among the facilities and programs discussed were bicycle, jogging, and nature trails, open park land, tennis courts, pools, baseball, softball, and soccer fields, playgrounds, and community centers. The plan also recommends modifying the mandatory dedication/fee in lieu of ordinance to comply with the requirements of the Pennsylvania Municipalities Planning Code.

Newtown Area Linked Open Space Plan

In 1988 the Jointure developed a plan for a regional linked open space system for pedestrians and bicyclists. The plan designates potential open space corridors to serve as a guide for future municipal acquisitions. The plan uses maps of natural features of the region, including floodplains, alluvial soils, wetlands, slopes, and woodlands, which were overlaid on a map of significant land uses and existing preserved open space to determine appropriate areas for linked open space. The land uses include schools, parks, and existing and proposed cluster or performance subdivisions and open space associated with them.

On the plan, the open space system comprises two types of open space corridors: "greenspace links" and "roadway open space links." Greenspace links principally were identified along areas of floodplains and alluvial soils, where possible, since these areas are likely to remain undeveloped due to natural resource restrictions. The existing Philadelphia Electric Company right-of-way through Newtown and Wrightstown townships also is a key greenspace link. The plan indicates that the Newtown Township Park and Recreation Board is planning a bicycle path on this right-of-way.

Roadway open space links were identified to preserve scenic drives. Generally, the roadway links were located in areas that are not adjacent to floodplains or that would serve as connectors to greenspace corridors or significant land uses.

These corridors were then linked to the schools, parks, and other likely destination points in areas of development. The plan also designates open space on its maps. These are large parcels located near a designated corridor and are appropriate locations for the preservation of wildlife and natural features. The plan was designed to be used as a tool to acquire land or easements during the development review process. When reviewing a development proposal, the municipality was to consult the linked open space plan to identify any portions of the site that fall within a proposed open space corridor. The municipality and developer then were to discuss incorporating these areas into the plan's required open space, or establishing an easement if open space is not required for the proposed development.

Municipal-Based Open Space Link Planning

Each of the Jointure municipalities addresses planning for future open space linkages in their open space plans. The *Newtown Township Municipal Wide Open Space Plan* identifies the utility corridors that cross the township as possible regional links across the township, but notes the strong public sentiment against using these corridors for such purposes. The plan also maps a proposed open space linkage system for the township. Proposed linkages are shown along the Neshaminy Creek below Tyler State Park (a trail proposed by the county in the 1986 *Bucks County Parks and Recreation Plan*), between Chandler Field and the high school by way of Sycamore Street and Swamp Road, and along Newtown–Yardley Road between Roberts Ridge Park and Silver Lake Park. Other future linkages are also shown on the map.

Wrightstown's open space plan, *Township of Wrightstown, Bucks County, Pennsylvania: An Open Space Plan,* also places a high value on providing pedestrian and bicycle linkages between open space lands. In a survey given to township residents, respondents identified the most desired types of facilities in open space areas as nature walks and trails. The plan recommends that the township establish trails through municipally-owned open space and that trail systems between developments be considered, particularly for development sites along or near the Neshaminy Creek. The plan also identifies the Neshaminy Creek as an important linkage that could potentially connect Tyler State Park with other regional parks, such as Core Creek Park, Neshaminy State Park, and Peace Valley Park.

Upper Makefield Township did not place a high a priority on developing new open space linkages in their 1998 plan, *Plan to Preserve Upper Makefield Township's Farmland and Open Space*. The Delaware Canal along the Delaware River is the main open space linkage in the township, which connects the north and south sites of Washington's Crossing State Park as well as connects the township with towpath municipalities to the north and south.

Community Facilities

Land use planning and planning for community facilities and services should be coordinated to the degree that the resources and activities of a variety of public, private and non-profit entities operating within a single community can be blended together to achieve common goals and outcomes. Suburban sprawl can increase the cost and difficulty of providing community facilities and services. Planned development, appropriately concentrated, can reduce costs for service providers and ultimately can lead to a better and more efficient provision of services to residents. Community facilities are part of the constellation of factors that can either enhance or detract from the quality of life in a community and are essential for the health, safety, and welfare of its residents.

This section will analyze the adequacy of existing and projected community facilities and services (i.e., police services, fire protection, emergency medical services, schools, libraries, solid waste management, stormwater management facilities, water facilities, and wastewater facilities).

Sewer and Water Service Considerations

Land use planning and planning for sewer and water services should be closely integrated. The maintenance of proper regional water balance is an important consideration. Public or off-site services are essential in certain areas to ensure public health, safety, and welfare and to provide the quality of life expected in areas of suburban or more intensive development. Individual, on-lot systems and land application systems in the rural portions of the region will help achieve the stated goals to maintain the rural character, support the continuation of farming, and replenish ground water resources.

Public or off-site sewer and water services should be considered service resources with limited capacities. These resources should be provided in the areas where they are needed to implement the region's planning policies. These services should not be provided outside the intended service areas until the uses within the areas are fully served and the municipal officials determine the expansions of the planning areas and the utility service areas are warranted.

It is most important to acknowledge that large portions of the Newtown region's primary source of potable water are groundwater. Individual and off-site water supply systems are dependent on the quality and quantity of this resource. Water resources directly affect the design, placement, and operation of both individual and off-site sewage treatment systems. At some point in the future, the availability of suitable water supplies may be the critical factor that affects development in the region.

It is not within the purposes or limitations of this comprehensive plan update to undertake a full analysis of the many aspects relevant to the need and supply of each type of service in each of the participating municipalities. It is a fundamental aspect of the Newtown Area planning program that sewer and water planning activities are the responsibilities and prerogatives of the individual municipalities. For example, the manner in which services are provided to a commercial area or higher density housing district in one municipality is likely to be substantially different from the way these services are provided in another community in order to achieve the objectives and policies of this comprehensive plan. Sewer and water planning are implementation activities of the municipalities undertaken individually to achieve the purposes of the regional comprehensive plan.

Wastewater Facilities

Wastewater collection, conveyance, treatment, and disposal are critical factors in comprehensive land use planning. Planning for the proper types of wastewater systems helps to implement the land use goals and to ensure a high quality of the natural and man-made environments. Coordination of the municipal sewage facilities planning and regional land use planning is a primary intent of this joint municipal planning program.

Over 95 percent of the homes and businesses in Newtown Township are served by public sewer through the Newtown, Bucks County, Joint Municipal Authority (NBCJMA) system, which discharges directly and indirectly (through the Core Creek Interceptor) to the Neshaminy Interceptor system of the Bucks County Water and Sewer Authority (BCWSA). The Neshaminy Interceptor ultimately discharges to the Northeast Philadelphia Treatment Plant, owned and operated by the Philadelphia Suburban Water company. Under an existing agreement with the BCWSA, the NBCJMA is obligated to operate and maintain its collection system and make any necessary replacements and improvements to maintain service. The NBCJMA reports that there are no major maintenance issues with the collection and conveyance system (e.g., infiltration and inflow problems) and that the authority is in the permitting phase of building a pump station and sewers to serve the failing on-lot systems in the Mardot Village development.

The only other public sewer system in the Newtown Area exists in Upper Makefield Township. The Heritage Hills treatment plant, operated by the Upper Makefield Township serves the development that it is named after and two other developments in the Taylorsville area. The plant has limited capacity and is not intended to receive additional flows.

In addition to these public sewer systems, there are a number of small nonmunicipal, industrial, and individual alternative wastewater treatment facilities in Wrightstown and Upper Makefield townships. There are 10 nonmunicipal facilities¹, six in Wrightstown (serving the Wrightstown Elementary School, a day-care, an inn, two retail stores, and an office) and four in Upper Makefield (serving the township building, an apartment building, Washington Crossing State Park, and a golf club). Three of the nonmunicipal facilities in Wrightstown use spray irrigation for treatment and disposal. The remaining nonmunicipal facilities utilize stream discharge. There are also six individual alternative wastewater treatment facilities with stream discharge serving single-family homes (five in Wrightstown, one in Upper Makefield) and two alternative

¹ Nonmunicipal wastewater facilities treat domestic-type sanitary wastes.

sand mound systems (built on steep slopes) serving single-family homes. There is one wastewater facility in Wrightstown that treats industrial wastewater with discharge to an unnamed tributary of Mill Creek.

Provisions for inspection and monitoring of theses facilities and future facilities in addition to that provided by Pennsylvania Department of Environmental Protection (DEP) and the Bucks County Department of Health (BCDH) can assist in ensuring continuous proper operation and maintenance. Integrating any future community facilities serving residential developments into a management plan implemented by a municipality would allow for more municipal control over system design and provide assurance of proper operation and maintenance. Wrightstown already has ordinance provisions requiring such an approach to managing such systems.

The vast majority of Wrightstown and Upper Makefield townships and a small portion of Newtown Township continue to rely on individual on-lot subsurface disposal systems. Yet the Newtown Area is somewhat evenly divided between soils suitable for conventional subsurface systems and soils that are not suitable for such systems. Large concentrations of soils generally suitable for on-site systems exist in the eastern portion of Upper Makefield surrounding the Delaware Canal from Dolington Road to north of Washington Crossing State Park. Large concentrations of soils generally unsuitable for on-site systems exist in the central portion Upper Makefield surrounding Jericho Mountain and scattered throughout Wrightstown. The major soil limitations in the Newtown Area are high water tables, slow permeability, and shallow depth to bedrock. Past studies and surveys have documented the presence of malfunctioning on-lot disposal systems (OLDS) scattered throughout Wrightstown and Upper Makefield townships and also concentrated in the Windybush, Penns Park, and Anchor Estates areas of Wrightstown and in the Dolington and Mt. Eyre areas of Upper Makefield.

All three townships have adopted OLDS management programs that provide educational material on and specify requirements for the proper operation and maintenance of these facilities. Detailed feasibility studies can help determine the degree of OLDS malfunctions, potential wastewater facility alternatives to address areas of concentrated malfunctions, and funding sources to offset the cost of any construction alternatives. Anytime developments intending to use community wastewater systems are proposed in the vicinity of on-site problem areas, there should be an evaluation of areawide wastewater management that includes servicing such problem areas. In addition, OLDS management programs should include assurances that septage (septic tank waste which needs to be pumped out periodically to ensure proper operation) is properly disposed of by septage haulers operating in the Newtown Area. Future wastewater planning for the communities could evaluate methods to shore up capacity at septage disposal sites, which may in turn reduce the cost of septage pumping to property owners and thus provide an incentive for proper maintenance of OLDS.

Wastewater Facilities Planning

Pennsylvania laws, which authorize sewage facility and land use planning functions, direct and encourage municipalities to coordinate these efforts. The Pennsylvania Code, Title 25, Chapter 71, Section 71.21 directs municipal officials to consider their 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 (Act 247 of 1968), as amended, provides that a plan for community facilities and utilities, including wastewater facilities, be made part of a comprehensive plan. In addition, Section 303(4) of the MPC specifies that any construction, extension, or abandonment of any sewer line or sewage treatment facility be reviewed by the municipal planning commission, ostensibly for consistency with the comprehensive plan. Section 604(1) of the MPC, which deals with the purposes of zoning, states that the provisions of zoning ordinances shall protect the public health and general welfare through adequate provisions for wastewater facilities. Section 503(3) of the MPC states that a subdivision and land development ordinance should contain standards for the installation of wastewater facilities.

The Pennsylvania Sewage Facilities Act (Act 537) assigns to municipalities certain responsibilities for wastewater planning. Each municipality is required to have an official wastewater facilities plan and, unless proposed facilities are consistent with the plan, the Pennsylvania Department of Environmental Protection (DEP) cannot issue permits for the facilities. However, a landowner has the option to request revisions to the municipal sewage facilities plan and may appeal a municipal refusal to revise the plan. Pursuant to the Sewage Facilities Act amendments (Act 149 of 1994), DEP is required to consider a municipality's zoning and comprehensive plan in the evaluation of private requests to change a community's official sewage facilities plan. Thus, it is most important that the comprehensive plan, zoning and the municipal sewage facilities plan are coordinated.

Comprehensive wastewater facility planning is an extremely complex process. For public or off-site wastewater services, considerations include methods to collect, convey, treat, and dispose of wastewater and related solids. Interaction among the municipality, various agencies, and users of the service is essential in the planning process. For areas where public service is not appropriate, procedures and standards to ensure adequate on-site or off-site land application wastewater disposal methods should be established. Again, these matters are addressed in the official sewage facilities plan of each municipality.

The Newtown Area is represented by four wastewater facilities plans. Newtown Township is represented by two plans: the *Newtown Township Act 537 Official Plan Revision* (1993) and the *Act 537 Sewage Facilities Plan Newtown Creek Drainage Basin* (1993). In combination these two plans recommend the continued use of on-lot disposal systems in non-sewered areas of the Conservation Management district and the use of the public sewer system, with specified improvements, in the remaining areas of the township. Since 1993, however, there have been several extensions of public sewer to numerous cluster subdivisions constructed in the CM district.

Wrightstown Township is represented by the 201 Facilities Plan, Township of Wrightstown, Bucks County, Pennsylvania (1984). This plan, adopted as an addendum to the Wrightstown Township Act 537 Plan, dated June 1979, recommends the construction of a STEP (septic tank effluent pump) pressure sewer system, with discharge to the Newtown Township Treatment Plant, as soon as funding is feasible. The proposed STEP system would be designed with capacity to serve only existing and infill development (at the time) in the more densely populated centers of the township (villages). The remainder of the township was intended to continue to be served by on-lot sewage disposal systems. The proposed STEP system was never constructed because of costs and lack of general support. The plan also recommends that the township pass a water resources ordinance to protect groundwater supplies, which it has (see water resources below).

The Upper Makefield Township Act 537 Sewerage Facilities Plan (1979) is the official Act 537 Plan for Upper Makefield Township. The plan recommends that individual and community on-lot wastewater disposal systems be utilized to meet the immediate five and ten-year wastewater disposal needs of the township. All subdivisions greater than ten lots or at the discretion of the Board of Supervisors, subdivisions less than ten lots, would be required to submit a detailed wastewater alternatives analysis including the need for and suitability of package treatment plants with spray irrigation (currently required in the subdivision and land development ordinance). In addition, on-lot management districts were to be formed within the entire township and include all newly constructed waste disposal systems and any existing waste disposal systems which require corrective action or replacement. Ordinances were to be enacted governing the design, operation and maintenance of waste disposal systems in the township. Since 1979, the township has adopted an On-Lot Disposal Systems (OLDS) Management program (updated in 1988) to address the operation and maintenance of on-lot systems and package treatment plants with stream discharge have been constructed for the Heritage Hills development, the Valley View apartments, and the municipal building as mentioned above.

At the present time, the wastewater facilities plans for Wrightstown Township and Upper Makefield Township are, respectively, over 20 and 25 years old. Their age alone, in light of the changes throughout the region which have taken place from 1979 and 1984 to the present, would suggest the need for their being updated. In addition, the implications of the future land use plan presented in this update must also be taken into consideration. Based on the results of the Residential Development Areas Analysis, this plan proposes that the Jointure accommodate projected future development through an expansion of the development area to include land located in zoning districts that are not currently part of the development area. A considerable portion of those zoning districts are located in Wrightstown and Upper Makefield.

The Newtown Region Joint Municipal Zoning Ordinance does not currently contain any provisions requiring proposed zoning changes or amendments to include a

services impact statement or sewage facilities statement defining demand for sewage facilities and evaluates the consistency with the wastewater facilities plan. In the event that a municipality would receive a rezoning request for development that would require municipal wastewater service and the site for that development is located outside the area intended for service under the municipality's wastewater facilities plan, the applicant should be required to submit a facilities impact statement. This evaluation would require that the applicant prove there is capacity in the wastewater collection, conveyance, treatment, and disposal system to serve the areas currently designated for service before capacity would be provided to outside areas. The evaluation would also include an analysis of all alternatives to ensure that the method chosen is consistent with the policies in this comprehensive plan. The provisions of the municipal sewage facilities plan are in the best interest of the municipality in terms of long-term environmental and economic considerations.

The provision of adequate wastewater is essential for subdivisions and land developments. To ensure this, wastewater facility planning (review and approval) should be coordinated with the review and approval of subdivision and land development plans. The subdivision and land development ordinances for all three Jointure municipalities contain plan submission, plan application and review procedure, and required improvements relative to wastewater facilities. The plan application and review procedure sections in the Newtown and Wrightstown ordinances contain requirements for the submission of planning modules for land development (required by DEP for proposed wastewater facilities). While Upper Makefield's subdivision and land development ordinance requires the submission of a detailed wastewater alternatives analysis report for subdivisions and/or land development of 10 or more lots/units, it does not contain any specific requirements for the submission of planning modules. Consideration should be given to amending the Upper Makefield ordinance to require the submission of planning modules as part of the preliminary plan submission. In addition, all three municipalities should consider amending their subdivision ordinances to require planning module approval prior to final plan approval or, as a minimum, allow conditional approval based upon approval of the appropriate planning modules from DEP.

Water Resources

It is no exaggeration to state that water is the *sine qua non* of life and critical to the health and welfare of any community. The availability of reliable sources of potable water helps to shape the types and intensity of development that can occur in a community and should play a major role in planning for the future. Protecting the environment and ensuring adequate water supplies require consideration of the entire water cycle, as stormwater falls to earth, entering the ground, lakes and streams where some of it is harnessed for human use and then returned afterwards. Issues pertaining to water resources are presented here in terms of water supply and water quality.

Section 301(b) of the Municipalities Planning Code (MPC) requires that comprehensive plans 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 Plan² and the *Water Resources Plan for the Delaware River Basin*, released by the Delaware River Basin Commission in September, 2004. It also recognizes that lawful activities such as extraction of minerals impact water supply sources and such activities are governed by statutes regulating mineral extraction that specify replacement and restoration of water supplies affected by such activities and recognizes that commercial agriculture production impacts water supply sources (Sections 301(b)(1) and (2) of the MPC).

Water Supply

Communities throughout Bucks County are concerned with water supply issues related to the safe yield of groundwater withdrawal and the potential reduction in groundwater recharge to local aquifers. Although approximately one-half of the water provided by the Newtown Artesian Water Company (NAWC) originates from the Delaware River, groundwater accounts for the majority of the water that is supplied in the Jointure by both individual systems and community water suppliers. The protection of these groundwater resources must be a critical consideration in planning for the current and future needs of the community.

At the regional level the Delaware River Basin Commission (DRBC) has established groundwater-protected area regulations for portions of southeastern Pennsylvania where the potential for groundwater shortages has been identified. Newtown and Wrightstown townships are included in these areas. Groundwater-protected area regulations apply to new or enlarged daily withdraws of 10,000 gallons or more involving municipal, public, industrial and commercial water suppliers. The DRBC monitors such withdraws and plans for future water demand. Owners of individual wells are also entitled to mitigating measures when their supplies are affected by a new water withdrawal. In municipalities outside of these groundwater-protected areas approval is required from the DRBC for water withdrawals exceeding 100,000 gallons per day. DRBC also encourages municipalities to monitor public and private water use to determine each community's sustainable groundwater yields.

As noted in the Natural Resources section of this update, groundwater supply is a product of the underlying geology of an area and, due to the different geologic conditions found in the Jointure, a wide range of water yields can be expected to be found throughout the area. Currently, two of the three municipalities require applicants to document the effects of proposed withdrawals smaller than those regulated by DRBC. Wrightstown Township (Ord. 167) requires a water impact study for all subdivisions

² 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 Areas 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.

consisting of 3 or more lots which will draw in excess of 1,000 gallons per day. Upper Makefield Township (Section 608 of the Subdivision and Land Development Ordinance) mandates a hydrogeologic report for similar-sized developments. Newtown Township does not currently have such regulations in its subdivision and land development ordinance; the service area of the Newtown Artesian Water Company (NAWC) covers most of the township.

An important consideration for protecting water resources involves ensuring that they are not wasted and used wisely. Government programs and the efforts of numerous non-profit organizations committed to environmental protection have been aimed at educating the public about how much water is consumed and wasted by everyday activities and what can be done to reduce unneeded consumption. In the Jointure, Newtown Township's Water Ordinance (Chapter 26, Part 1) includes regulations regarding the rate of water discharge for fixtures and facilities such as showerheads and toilets. Wrightstown Township also has regulations governing water conservation. All Jointure municipalities are in compliance with DRBC Resolution No. 88-2 which sets water conservation performance standards for plumbing fixtures and fittings.

Efforts to promote the recharge of groundwater-supply areas stand as another important part of preserving water resources. While many of these efforts involve stormwater management (which is discussed later in this section), the Joint Municipal Zoning Ordinance provides regulations to protect areas that have been deemed important to the recharge of groundwater resources. Section 305(B) of the ordinance states that the Conservation Management District (CM) includes a variety of natural resources, including aquifer recharge areas. The types and intensity of uses permitted in the CM District are intended to provide the "maximum opportunities for open space" for the purpose of protecting such resources. Section 401, which governs this district, primarily permits residential, agricultural and recreational uses. It requires a maximum gross density of 0.33 dwelling units per acre for single-family detached residential developments and a minimum open space ratio of between 55 and 60 percent for other permitted residential uses. The Objectives and Policies and the Land Use Plan of previous updates to the comprehensive plan state that the Conservation Management planning areas shall serve as the groundwater recharge area for the region.

Unlike other resources that are generally site specific, water is a shared resource that flows between and beyond municipal boundaries. As was noted in the natural resources section, several hydrologic studies previously have been conducted within the Jointure, but no comprehensive study of the entire Jointure's groundwater has thus far been undertaken. This plan recommends that such a study be considered to understand the hydrology of the area. This is especially important for areas of the Jointure that rely on low-yield aquifers for the supply of water and for areas that may be susceptible to groundwater contamination. This study would help the community to determine the current state of its groundwater resources and to assess the effectiveness of its current efforts to protect this resource. It would also provide data to guide and support any future regulatory efforts of the sort recommended above. A recent water resources planning effort conducted by the Pennridge Area Coordinating Committee could serve as a model for a future planning effort in the Newtown Area. The recommendations of the Pennridge Water Resources Plan include such measures as forming an intermunicipal water resources committee, developing a model water resources management ordinance, and preparing an integrated water resource plan (IRP).

Any consideration of water supply and planning must take into account the presence and extent of public water supply facilities in the community. Portions of the Jointure are included in the service areas of two public water suppliers. The Newtown Artesian Water Company (NAWC) provides service to Newtown Township, Newtown Borough and a portion of Middletown Township; its service area currently covers most of Newtown Township and is projected to be extended to the northeast corner of the township (an area of Linton Hill Road and north of PA 532) in 2006. NAWC obtains its water supply from 5 groundwater sources and by means of an interconnection with the Bucks County Water and Sewer Authority (BCWSA) which supplies the company water from the Delaware River. In 2004 the NAWC provided service to 9,502 customers with an average daily demand of 2.251 million gallons. The NAWC's wells provided approximately one-half of the total water supplied by the company. Upper Makefield Township Heritage Hills serves a small portion of the township southwest of Taylorsville Road and Woodhill Road. In 2003 there were 1,288 residents served by this supplier with a total average daily water use of 80,919 gallons. No public water supply services currently exist in Wrightstown Township.

Water service supplied by a larger, off-site supply system is a service that is a growth facilitator and should be permitted only in the areas that have been planned for more intensive nonresidential and higher density residential development. Areas intended for these uses and the provision of municipal or off-site sewer service would be the areas where off-site or community water systems should be provided. Off-site water should not be provided in areas that are intended to maintain a rural character or to support farming.

In addition to water supply issues, the capability of the water system for fire fighting is an important community safety matter. In the area of a municipality where more intensive residential and nonresidential uses will be located, the water system should be looped and a grid formed to provide alternative directions of flow.

Water Quality

Groundwater quality is continually threatened by land uses and the activities that take place on those lands. Some land uses and activities are more compatible with maintaining good water quality and some are less compatible with maintaining good water quality. Common sources of groundwater contamination are listed in the table below.

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

Common Sources of Groundwater Contamination

(Adapted from US EPA. 1991. Protecting Local Groundwater Supplies Through Wellhead Protection)

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. Thus, information on water quality problems of private wells is not readily available.

Beginning in 2005, the Bucks County Department of Health (BCDH) began certifying new private wells to help prevent residents from drinking contaminated water. This regulation will apply to new, but not existing, private wells. One of the key components of the new program will be to certify 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 for Disease Control and Prevention. While the BCDH well inspection will only occur at the time a well is constructed, it is recommended that all residents and business owners who rely on private wells have them tested every year or so to make sure they are safe.

Amendments to the Safe Drinking Water Act of 1986 require that states 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. Open space and low-density land uses are appropriate uses near high-protection well fields. Wellhead protection programs have become both pollution prevention and a

water supply planning tool.³ At the current time the Jointure does not have regulations regarding the establishment and protection of wellhead protection zones.

As noted in the Natural Resources section, the Lower Delaware River Management Plan has been developed with several goals in mind, including maintaining and improving water quality. Each of these goals has associated implementation strategies, many of which have already been carried out by the Jointure. For example, the Joint Municipal Zoning Ordinance regulates development within floodplains and riparian areas and requires that stormwater runoff be controlled to limit downstream flooding and water quality impacts.

Stormwater Management

Stormwater runoff is the rainwater that moves over the ground during and immediately following a rainfall event. Stormwater runoff moves through specific drainage areas referred to as watersheds. 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 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 watershed scope of stormwater management problems and potential solutions.

In the 1970s, the County began making several structural improvements in the Neshaminy Creek watershed. A network of flood control structures were planned and constructed to reduce the potential for flood damage in the upper and lower reaches of the Neshaminy Creek. The Newtown Creek Dam (PA 621) was constructed in the late 1970s on the stream that it is named after, in Newtown Township. This facility holds 663 acrefeet of water and drains an area of 3.04 square miles. While this dam and other impoundments provide stormwater storage and flood control to a considerable extent, they do not provide full flood reduction and do not adequately address more localized stormwater runoff and flooding. Moreover, the approach to stormwater management has changed significantly since the time when these large regional structures were constructed.

³ The Pennsylvania Safe Drinking Water Act (1994) mandates that after October 9, 1995, for any new or expanding community water system (i.e., systems serving more than 25 persons on a regular basis or systems with over 15 service connections) the municipality, municipal authority, or private water purveyor that provides a community water supply to the public must have ownership, or substantial control by deed restriction, the area know as Zone 1 surrounding the wellhead. As required by 25 PA Code Chapter 109, Zone 1 should contain a minimum wellhead protection radius of 100 feet, but can be expanded based upon the results of detailed hydrological testing of the area surrounding the wellhead.

Act 167, the Pennsylvania Stormwater Management Act of 1978, was enacted to address the growing negative impacts of stormwater runoff. Act 167 requires the Pennsylvania Department of Environmental Protection (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 its impact on water quality.

The Newtown Area is located within two DEP designated watersheds: the Neshaminy Creek Watershed and the Delaware River South Watershed. Nearly all of Newtown Township and more than three-quarters of Wrightstown Township are located in the Neshaminy Creek Watershed while the remainder of these two townships and all of Upper Makefield Township are located in the Delaware River South Watershed. Bucks County has prepared and adopted stormwater management plans for the two watersheds.

The *Neshaminy Creek Watershed Stormwater Management Plan* was originally prepared in 1992. It mandates 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 in order 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, the proximity to existing flood control structures and streams, and the need to protect downstream areas. The use of infiltration best management practices (BMPs) is encouraged to address runoff rates and volumes and to 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), to reduce site disturbance as much as possible, and to minimize increases in runoff and impacts to water quality.

In 2005, all three Jointure municipalities adopted new ordinances to control stormwater management consistent with the *Delaware River South Stormwater Management Plan.* Wrightstown and Newtown also adopted new ordinances for the Neshaminy Creek Watershed that integrate the basic groundwater recharge, water quality, and low impact design and sequencing requirements of the Delaware River South Plan with the release rate requirements of the 1992 Neshaminy Creek plan.

Work has begun by Bucks County to update the Act 167 *Neshaminy Creek Watershed Stormwater Management Plan.* A watershed plan advisory committee (WPAC) has been established to oversee development of the plan. New requirements to be provided in this updated Act 167 stormwater management plan will assist in establishing more effective management of stormwater. It will focus on water quality and groundwater recharge similar to that established in the *Delaware River South Stormwater Management Plan.* More attention will be given to the control of volume rather than rate of release in managing stormwater. It is anticipated that a new standard will be established that would require a Permanently Removed Volume (one inch of runoff) for all development sites. This would mean that one inch of runoff created from development on a site must be removed using suitable BMPs in any way that the designer sees fit.

In addition to the stormwater management ordinances that were adopted in accordance with the Delaware River South and Neshaminy Creek plans, each Jointure municipality has regulations related to stormwater structures in their subdivision and land development ordinance. These regulations are mainly comprised of general drainage requirements, stormwater plan submission requirements, and specific design criteria for storm sewers and detention basins. Many of these requirements predate the separate stormwater management ordinances. Only the Wrightstown Township subdivision and land development ordinance has been revised to include a reference to required compliance with the separate stormwater management ordinances. All the subdivision and land development ordinances should include appropriate references to the separate stormwater management ordinances. In addition, the design requirements of facilities addressed by the subdivision and land development ordinances should be evaluated by municipal engineers to ensure that they consistent with the BMP designs prescribed by the separate stormwater management ordinances.

Portions of the Jointure municipalities were developed prior to adoption of the mandated plans and ordinances. Stormwater in some of these areas are channeled into storm sewers or directly into streams, with no control over the velocity and amount of runoff. Moreover, stormwater management facilities constructed before the recent regulations do not provide water quality protection or groundwater recharge benefits.

NPDES II Regulations

The National Pollutant Discharge Elimination System (NPDES) is a two-phase federal program created as an outgrowth of the Federal Clean Water Act (1972), which attempts to establish local regulations creating a nationwide reduction of the pollutants found in our nation's waterways. The purposes of the program are to reduce pollution, promote and require better stormwater management, and educate the public about water pollution. This program was amended in 1987 to include stormwater discharge regulations. The first phase of the NPDES program was established in the early 1990s and targeted large communities and industrials facilities. These entities were required to obtain permits from the state in order to enforce good housekeeping practices on-site and to bring about a reduction of the hazardous materials kept on the premises where they could be washed off the site by rainfall and enter local waterways. This latest phase of the NPDES program, Phase II (2003), is aimed at smaller urban communities, as defined by the Pennsylvania Department of Environmental Protection (DEP) based on U.S. Census data. Small urban areas that are designated as "MS4s" (Municipal Separate Storm Sewer System) must obtain a state permit showing how they intend to manage pollution in the municipality.

In accordance with the goals of the NPDES program, small communities, including the three municipalities in the Jointure, must develop a stormwater management program that includes six minimum control measures. These measures include public education and outreach, public participation, illicit discharge detection and elimination, and construction site and post-construction runoff control and pollution prevention. Over an 8-year period communities must fully establish a program to satisfy these requirements and evaluate its effectiveness. Such a program must be integrated with the Act 167 stormwater management plan. Municipal adoption of separate stormwater management ordinances consistent with the stormwater management plans satisfies the post-construction runoff control requirement. Annual reports must be submitted to DEP to document how the municipality is meeting the incremental elements of the program.

Thus far, the Jointure municipalities have submitted the requisite annual reports to maintain compliance with the NPDES II program. DEP has expressed some concerns with the municipal program, particularly construction site controls, the continuance of post-construction storm water management facility maintenance, and the operation, maintenance, and inspection of municipally owned stormwater facilities. In the next several years the townships will be expected to address these concerns and maintain compliance with this program.

Stormwater management planning should involve determining responsibilities for, and scheduling of maintenance for, stormwater management facilities. Narrative or other descriptive information that details short-term and long-term operation and maintenance tasks and estimates the projected life span of a stormwater management facility should be provided for every such facility constructed. This data is critical for municipalities to monitor the development and use of stormwater management techniques. Ensuring proper long-term operation and maintenance would aid in the municipality in complying with federal and state requirements (e.g. the NPDES II Stormwater Program). Projected scheduling also allows budgeting time and funds to inspect, repair, or condemn facilities if necessary throughout their functional life span.

Solid Waste Management

Solid waste management is the process of providing an economically and environmentally sound means for the storage, collection, transportation, processing, and disposal of municipal waste and recyclable materials. In Pennsylvania, through the Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988 (Act 101), municipalities are empowered to adopt resolutions, ordinances, regulations and standards to carry out the responsibilities mandated by state regulations. In addition, counties are given the responsibility to prepare a solid waste management plan that guides the management of municipal solid waste for a ten year period. The Pennsylvania Department of Environmental Protection (PADEP) approved the Bucks County Plan, prepared by the Bucks County Planning Commission, in March of 1991. The plan provided for the regulation of haulers and the designation of disposal sites for municipal solid waste and recyclables. It also documented the flow of municipal waste generated in Bucks County and provided an assurance of disposal capacity during that time.

On December 23, 2000 the Commonwealth adopted changes to its municipal waste planning regulations. Those changes required that each county revise its Act 101 plan at the earlier of 1) having less than three years of assured capacity, or 2) within three years of the expiration of its plan. Because ten years had lapsed since the preparation of the current plan, it was necessary that Bucks County initiate the preparation of a plan revision.

A plan revision was prepared and subsequently approved by the PADEP in January of 2006. The revised plan provides continued guidance for the management of solid waste in Bucks County through the year 2014. It includes recommendations for attaining the goal of recycling 35 percent of the waste stream and proposes language to amend municipal ordinances, due to the elimination of flow control requirements and the adoption of Title 27 by the Commonwealth of Pennsylvania, which provides for the licensing of waste haulers by the PADEP.

Most of the property and business owners in the townships of Newtown, Upper Makefield and Wrightstown contract directly with private haulers to collect, transport and dispose of their municipal solid waste. Most haulers deliver the municipal waste collected in these three townships for disposal at a landfill or waste-to-energy facility in the region. Some portion of the waste may be delivered to a transfer station in Bucks or Montgomery counties prior to disposal.

Section 1501 of Act 101 requires that all municipalities either with a population of between 5,000 and 10,000 residents and a population density of over 300 persons per square mile or with a population greater than 10,000 residents establish and implement a source-separation (curbside) and collection program for recyclable materials. Based on the most recent census results, Newtown and Upper Makefield townships are considered to be mandated communities, must establish and implement a curbside recycling program and must report the results of the program annually to the county. Wrightstown Township is not required at this time to implement a curbside recycling program.

Both Newtown and Upper Makefield townships have instituted mandatory curbside recycling programs, while Wrightstown has established a drop-off program for its residents at its municipal building. The materials collected as part of the curbside programs include: aluminum/steel food/beverage containers, three colors of glass food/beverage containers, #1 and #2 plastic bottles, newspaper, magazines, catalogs, and junk mail. The drop-off program provides for: aluminum cans, three colors of glass food/beverage containers, newspaper, magazines, catalogs and junk mail.

| Program Year | Total Reported Recycled | Commercial Recycling | Recycling Rate | |
|-------------------|----------------------------|-------------------------|-------------------|--|
| 2004 | (tons) | (tons) | (%) | |
| Newtown Twp. | 4,119 | 2,194 | 28 | |
| U. Makefield Twp. | 867 | 21 | 15 | |
| Wrightstown Twp. | 148 | 20 | 6.5 | |

Figures reported as part of their annual municipal recycling reports for 2005 are presented in the following table:

Pennsylvania set a goal in 1997 to recycle 35 percent of the municipal waste stream by 2003. Although the Commonwealth and Bucks County both reportedly reached this goal in 2002, all three Jointure communities individually appear to have fallen short of this goal. As noted above, only 165.2 tons of non-residential materials were reported to have been recycled in 2004. This, however, may be more of a reporting issue than a lack of recycling on the part of the businesses in the townships. In addition, no yard waste was reported as being recycled in 2004 and yard waste typically comprises about 18 percent of the municipal waste stream. Efforts to address these two issues are needed in order to fully determine the recycling rates in these communities.

It is anticipated that private haulers operating within the three municipalities will continue to provide for the collection, transportation, processing and disposal of municipal solid waste as well as the recyclables generated in the townships. However, in order to approach the goal of recycling 35 percent of the waste stream, it will be necessary to implement an education program for both residents and businesses and to develop a reporting program that enables the communities to track the quantities of materials recycled by both the residential and non-residential sectors of the Jointure.

The issue of reporting can, in part, be addressed through municipal ordinances. Through such ordinances these municipalities could regulate haulers operating within their borders and require the reporting of all recyclables collected from both residential and non-residential customers. The enforcement of the ordinance would enable the municipalities to determine more accurately the recycling rate within each community. In addition to increasing recycling rates, having a better accounting of non-residential recycling tonnages can increase the eligible tonnages of recyclable materials that can be included on PADEP Performance Grant applications, which could result in greater income to the municipalities through this program.

Yard waste is not a material eligible for inclusion on Performance Grant applications. However, if the townships were to adopt an ordinance that would mandate the separation of yard waste from regular municipal waste, greater amounts of this reusable material would be generated. This would result in an even greater diversion of waste from the municipal waste stream. Whether or not yard waste should be collected separately needs to be evaluated by the townships. As noted above, yard waste can amount to as much as 18 percent of the municipal waste stream. If the townships of the Jointure were to include this material in their recycling program, their recycling rates could rise accordingly. In order to properly institute such a program it would be necessary to adopt the requisite ordinances requiring that homeowners separate this material from their regular waste and that haulers collect it, transport it to a yard waste facility, and report the tonnages/volumes delivered to such a facility to the townships. The costs associated with a yard waste collection program, however, need to be compared to the potential benefits of helping the township to meet the thirty-five percent recycling goal, potentially providing public works and park and recreation departments with mulch, reducing the need to transport the waste to a facility outside of the area, offering township residents a place to dispose of yard waste locally, and possibility providing residents with a source of mulch.

The activities associated with the development of ordinances and educational programs are themselves eligible for funding assistance through Section 902 of Act 101. Assistance in the evaluation of instituting a yard waste collection program is available through the Technical Assistance Grant program. These programs are administered through the PADEP.

Community Services

A host of other government agencies and non-profit organizations provide important services that enhance the quality of life for residents in a community. Growth and development can have an important impact on the quantity and quality of services that those entities provide. Land use planning should include a general consideration of the current state and future needs of such organizations, even though they may not be under the control of the municipalities themselves. Municipal cooperation, communication and sharing of information with these organizations can improve the efforts of all parties to enhance the quality of life for all residents.

Police

The Upper Makefield Township Police Department consists of 17 members who provide police protection for residents of the township. The department is located on Eagle Road in the same location as the township municipal building and Station 81 of the Upper Makefield Fire Company. In 2006 the department will occupy a new facility located on the same site. Information provided by the department indicates that its manpower is adequate at this time but additional staffing would be useful. The department attempts to utilize grant resources when hiring new officers for the township. According to department officials the intersection of Wrightstown Road and Highland Road, Taylorsville Road and River Road are troublesome traffic areas in the township. Data regarding calls for service over the last seven year do not signal either an upward or downward trend in the need for police services in the community. The 28-member Newtown Police Department provides police protection for residents in both Newtown Township and Wrightstown Township. The department is headquartered at the Newtown Township Municipal Center. Along with the 28 member force there are one part-time and four full-time civilian employees. The department is currently in need of more office space (in particular, an interview area) to carry out its duties. According to police department officials commercial areas tend to generate a higher frequency of calls for service than other portions of the two townships.

Fire Protection

The Newtown Fire Association provides fire protection for Newtown Township and Newtown Borough. The Association staffs two stations, one of which is located in the borough (Station 45). The other (Station 55) is located in the Newtown Township Municipal Center at 55 Municipal Drive. In 1996, in response to an increase in the number of fire calls and a decrease in the number of volunteers available during daytime working hours, the Association and the Township created the Newtown Township Emergency Services Department. The Emergency Services department operates out of Station 55 and provides daytime coverage for calls with support from the existing volunteer membership.

The Emergency Services Department is staffed by a Director/Fire Marshal, an administrative assistant and seven fire inspectors. In addition to responding to emergencies during the day the department also performs numerous related duties, including annual fire inspections on all commercial occupancies, code enforcement, and fire prevention education

The Upper Makefield Fire Company serves the township out of two stations. Station 81 is part of the Upper Makefield Township Complex on Eagle Road. Station 71, on Taylorsville Road, was renovated and expanded in 2006 to accommodate additional equipment and to allow the department to meet its increasing responsibilities.

The Lingohocken Fire Company provides fire protection for all of Wrightstown Township, and portions of Buckingham and Upper Makefield townships from two stations. The main station is located in the village of Wycombe (Station 35) and the substation is located in the village of Forest Grove (Station 95).

Medical Services

St. Mary Medical Center—Although not located within the boundaries of the Jointure, St. Mary Medical Center is a regional hospital that provides important services to residents of the Newtown Area. The hospital is licensed for 327 beds and has a staff of 500 physicians and 2,300 employees. In 2004 the facility handled 20,000 inpatient visits, 42,000 emergency room visits, and 150,000 outpatient procedures. The medical center recently embarked on a major expansion project that includes:

• Renovation and modernization of the Cancer Center

- Construction of a 50-bed Comprehensive Cardiac Care Unit,
- 15-bed Emergency Services addition
- Two orthopedic surgical suites
- Two Electrophysiology Laboratories for diagnosis and treatment of irregular heartbeats
- Expansion and modernization of Clinical Lab
- Construction of a second 102,000-square-foot Medical Office Building with twodeck parking garage
- New 89-car parking lot and 300-car extension of the parking garage

Emergency Medical Services—Emergency medical services within the Jointure are provided by the Newtown Ambulance Squad and the Central Bucks Ambulance Squad.

Schools and Colleges

Council Rock School District—The Council Rock School District is comprised of five municipalities: Newtown Borough, Newtown Township, Northampton Township, Upper Makefield Township and Wrightstown Township. Current district-wide enrollment is 12,672 students. The district is also an important employer in the area.

There are ten elementary schools (grades K-6), three middle schools (grades 7-8) and two high schools (grades 9-12) in the district. Newtown, Goodnoe, Sol Feinstone, and Wrightstown Elementary Schools along with Newtown Junior High and Council Rock High North are located within the boundaries of the Jointure.

| School | Total Enrollment |
|--------------------------------|---------------------|
| Goodnoe Elementary | 767 |
| Newtown Elementary | 811 |
| Sol Feinstone Elementary | 790 |
| Wrightstown Elementary | 364 |
| Newtown Middle School | 824 |
| Council Rock High School-North | 2,258 |

Enrollment projections for the entire district predict less than one percent growth in the number of students attending schools in the district each year up to the 2007-2008 school year. It should be noted, however, that this estimate does not preclude fluctuations in the population served by each individual school.

Saint Andrew Catholic School—The Saint Andrew Catholic School is a private K-8 school located in Newtown Township. Current enrollment numbers nearly 1,000 students. The school moved to its present location in January of 1995 after the construction of the education building, which was originally designed to hold 750 students. From 1998 to 2000 an additional 20,000 square feet of classroom and cafeteria space was added to accommodate the increase in enrollment, which also resulted in the establishment of four classes in every grade level.

Colleges—The main campus of Bucks County Community College (BCCC) is located on Swamp Road in Newtown Township. BCCC is a two-year institution that offers a wide variety of certificate, associate degree and transfer programs in fields such as business, education, nursing and the liberal arts. In the spring semester of 2006 there were 6,864 students enrolled at the college, a slight decline from previous levels. The construction of an addition to an existing building to provide additional space for two medical training programs is currently underway and is expected to be completed by the fall of 2006. Several building renovation projects and efforts to increase the accessibility of the campus in order to ensure compliance with Americans with Disabilities Act requirements are also ongoing.

The Bucks County Center of La Salle University in Newtown Township is one of two branch campuses of LaSalle University whose main campus is located in Philadelphia.

Opened in 1994, Holy Family University- Newtown occupies 79 acres in the township. The 44,000 square foot building provides space for administrative and student services, faculty offices, and a variety of classrooms and laboratory facilities.

Libraries

Residents of the Jointure are served by the Bucks County Free Library System, which not only maintains 7 branches throughout the county but also provides access to and support for 11 community public libraries in various municipalities. The system also includes several more specialized libraries such as the Bucks County Planning Commission library, the law library at the Bucks County Courthouse and the libraries located on various campuses of Bucks County Community College.

The main library of Bucks County Community College is located on its campus on Swamp Road. The library houses 140,000 volumes with a yearly circulation of approximately 26,000 books and about 50,000 visits per year. Members of the general public who are also members of the Bucks County Free Library System are allowed to check out materials from the library. The hours of the library vary according to when the college is in session. According to information supplied by the college, public use of the library has generally remained constant over the last several years and no major expansion of facilities or staffing is anticipated at this time.

The Village Library of Wrightstown is one of eleven community public libraries in the Bucks County Free Public Library system. The library has a collection of nearly 22,500 items and a total circulation of 25,000 materials each year. The number of patrons per year ranges between 11,000 and 12,000 visitors.

The library has a full children's section, a basic adult non-fiction section, and an extensive collection of adult fiction that supports the libraries role as a recreational reading library. The library is staffed by one full-time library professional, a part-time clerk and a part-time children's program coordinator. Volunteers fill a variety of

additional roles, but library officials note that volunteer levels are stagnating. Long time volunteers make up a majority of the volunteers while younger residents are not able to volunteer due to other commitments.

Library officials have noted a definite increase in the number of patrons over the past five years and anticipate the numbers to rise. The library is nearing capacity and has begun a periodic weeding of books to make room for additions to the collection. If the library is to continue to grow additional square footage will be needed in the future.

The David Library is a specialized library which is devoted to the study of American history from 1750 to 1800 with a primary focus on the American Revolution. The library was founded by Sol Feinstone in 1959 and opened at its present location in 1974. The collection now includes over 40,000 printed materials in bound volumes and microcards, and 10,000 reels of microfilm containing original American, British, Loyalist, French and German records. Facilities include the research library, a conference center, and a residence facility for visiting fellows. The library is open to the public Tuesday through Sunday and admission is free.

Transportation

The overall function of transportation is to provide for the movement of people and goods between particular places. In recent years, rapid population growth and, ironically, the strong economy, have challenged the ability of the transportation system to balance those goals. Funding levels for roads, the backbone of the transportation system, have not kept pace with the proliferation of motor vehicles, housing and businesses, which increase the demand for road miles. The backlog of needed road maintenance and construction projects has grown larger.

The transportation network connects people and places to one another. In the most general terms, the purpose of the transportation network is to move goods and people from one place to another. The general well-being of this system is directly influenced by the type and size of the growth which occurs along the network. Proper land use planning is critical to prevent adverse effects to the transportation network due to improper development. Conversely, when transportation improvements are designed, it is important to address the needs of the general public, individual property owners and neighborhoods. Most transportation improvements should be designed as multiple-use facilities that provide for pedestrians, bicycles, public transit and automobile use.

While the Jointure has made significant strides in encouraging efficient land use patterns, people tend to use their automobiles more frequently than in the past. While this is typical of most communities, an automobile-dominated transportation system may destroy more opportunities than it creates. This combined with minimal public transportation in the Newtown Area creates safety problems and traffic congestion. Once seen as a symbol of freedom that gave the individual citizen command over time and space, the automobile is now increasingly seen as a major source of congestion and pollution.

Travel Characteristics

Information regarding how people work and travel in the Jointure provides a perspective on conditions in the community. Census data from 2000 includes information on the time it takes for individuals in the Jointure to commute to work. This information does not capture travel for other purposes by residents of the Jointure; it also does not record trips made through the community with both origins and destinations outside its boundaries. The figures indicate, nonetheless, that travel time to work for residents of the Jointure is longer than a half-hour in all three townships. Travel time in the Jointure exceeds the county average by between approximately 4.5 to 6.5 minutes and exceeds the state and national averages by between approximately 7.5 to almost 10 minutes. Travel time to work suggests the importance of transportation issues for the future of the community and future land use decisions should be taken with an eye

| Mean Travel Time | |
|-------------------|------|
| to Work (minutes) | 2000 |
| Newtown | 35.1 |
| Upper Makefield | 33.4 |
| Wrightstown | 33.0 |
| Bucks County | 28.6 |
| Pennsylvania | 25.2 |
| United States | 25.5 |

towards what their effects will be on how people commute and how long it takes them to reach the employment centers where they work.¹

Source: U.S. Census (QT-P23 Journey to Work: 2000)

A look at the means that Jointure residents employ to commute to work reveals the unsurprising finding that the community is overwhelming dependent on the automobile to get to work. The vast majority of those using cars, trucks or vans were also alone in their car as they headed to their jobs. The percentage of those using public transit showed only a slight increase between 1990 and 2000 in Newtown and Wrightstown and a decline in Upper Makefield. The majority of those using public transit in the three townships used the train, possibly to head to the employment centers of Philadelphia, northern New Jersey and New York. Bicycle use and walking also declined in all three townships. Perhaps reflecting the growth of computer use and the Internet age, working at home increased in all the Jointure's communities, the percentage doubling in Newtown (4.3 percent) and Upper Makefield (7.9 percent). The means of travel employed in the Jointure differs little from trends found in the county.

Linked to how people commute and how long it takes to get to their jobs is the location of the jobs where they work. The overwhelming percentage of residents in the Jointure did not work in the township in which they lived. Upper Makefield, with the highest percentage, had 15.9 percent of its residents working within the township. In Wrightstown, 13.8 percent of residents also worked there. In Newtown, the figure was 14.5 percent, although that number does represent a doubling of the percentage of township residents also working there. About half of those living in Newtown and Upper Makefield work in Bucks County (these totals increased from 1990 to 2000). Over 60 percent of Wrightstown residents work in the county (this figure decreased between 1990 and 2000). Perhaps due to its closer proximity to New Jersey, Upper Makefield has the lowest percentage of workers who are employed in Pennsylvania (64.9 percent). In Newtown 71.6 percent and in Wrightstown 81.1 percent of those who live in these communities are employed in Pennsylvania.²

¹ According to information from the American Community Survey for 2004, the U.S. Census Bureau reported that the average travel time to work for workers 16 and older not working at home was 26.6 minutes in Bucks County. While this may indicate some improvement over 2000, the county still ranked 64th (along with Camden County and Chester County) out of 231 counties with populations of 250,000 or more in the length of the commute time for the average worker.

 $^{^2}$ Given that the U.S. Census collected data by minor civil division and the Jointure is not recognized as such, it is not possible to know how many residents in each of the 3 townships who do not work in their own minor civil division do in fact work in another Jointure community (e.g. a Wrightstown resident who works in Newtown is not specifically captured by this data).

| Means of Transportation to Work | | | | | | | | | |
|---------------------------------|-------------------------------|---------|--------|---------|-----------------|---------|--------|---------|--|
| | Newtown | | | | Upper Makefield | | | | |
| | 1990 | | 2000 | | 1990 | | 2000 | | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | |
| Car truck or van | 7,120 | 91.8% | 8,687 | 90.4% | 2,662 | 87.7% | 2,962 | 86.4% | |
| Public transportation | 339 | 4.4% | 428 | 4.5% | 124 | 4.1% | 111 | 3.2% | |
| Motorcycle | 0 | 0.0% | 0 | 0.0% | 9 | 0.3% | 0 | 0.0% | |
| Bicycle | 30 | 0.4% | 9 | 0.1% | 14 | 0.5% | 0 | 0.0% | |
| Walked | 70 | 0.9% | 51 | 0.5% | 90 | 3.0% | 63 | 1.8% | |
| Other | 32 | 0.4% | 24 | 0.2% | 24 | 0.8% | 23 | 0.7% | |
| Worked at home | 163 | 2.1% | 415 | 4.3% | 112 | 3.7% | 270 | 7.9% | |
| TOTAL | 7,754 | 100.0% | 9,614 | 100.0% | 3,035 | 100.0% | 3,429 | 100.0% | |
| | Wrightstown | | | | | | | | |
| | 19 | 90 | 20 | 00 | | | | | |
| | Number Percent Number Percent | | | | | | | | |
| Car truck or van | 1,171 | 91.1% | 1,269 | 91.4% | | | | | |
| Public transportation | 19 | 1.5% | 24 | 1.7% | | | | | |
| Motorcycle | 0 | 0.0% | 0 | 0.0% | | | | | |
| Bicycle | 2 | 0.2% | 0 | 0.0% | | | | | |
| Walked | 41 | 3.2% | 18 | 1.3% | | | | | |
| Other | 2 | 0.2% | 3 | 0.2% | | | | | |
| Worked at home | 51 | 4.0% | 75 | 5.4% | | | | | |
| TOTAL | 1,286 | 100.0% | 1,389 | 100.0% | | | | | |

Source: U.S. Census (P049 Means of Transportation to Work (1990), QT-P23 Journey to Work: 2000)

| Means of | Join | iture | Bucks County | | | |
|-----------------------|----------------|--------|--------------|---------|--|--|
| Transportation | 2000 | | 200 | 00 | | |
| to Work | Number Percent | | Number | Percent | | |
| Car truck or van | 12,918 | 89.5% | 277,271 | 91.3% | | |
| Public transportation | 563 | 3.9% | 8,485 | 2.8% | | |
| Motorcycle | 0 | 0.0% | 204 | 0.1% | | |
| Bicycle | 9 | 0.1% | 553 | 0.2% | | |
| Walked | 132 | 0.9% | 5,079 | 1.7% | | |
| Other | 50 | 0.3% | 1,202 | 0.4% | | |
| Worked at home | 760 | 5.3% | 10,792 | 3.6% | | |
| TOTAL | 14,432 | 100.0% | 303,586 | 100.0% | | |

Source: U.S. Census (P049 Means of Transportation to Work (1990), QT-P23 Journey to Work: 2000)

| Place of Work | | | | | | | | |
|-----------------------|---------|-------------|--------|---------|-----------------|---------|--------|---------|
| | Newtown | | | | Upper Makefield | | | |
| | 1990 | | 2000 | | 1990 | | 2000 | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| TOTAL workers | 7,754 | 100.0% | 9,614 | 100.0% | 3,035 | 100.0% | 3,429 | 100.0% |
| Worked in | | | | | | | | |
| township of residence | 542 | 7.0% | 1,394 | 14.5% | 340 | 11.2% | 546 | 15.9% |
| county of residence | 3,385 | 43.7% | 4,642 | 48.3% | 1,449 | 47.7% | 1,736 | 50.6% |
| state of residence | 5,102 | 65.8% | 6,888 | 71.6% | 1,941 | 64.0% | 2,225 | 64.9% |
| | | Wrightstown | | | | | | |
| | 19 | 990 | 2000 | | | | | |
| | Number | Percent | Number | Percent | | | | |
| TOTAL workers | 1,286 | 100.0% | 1,389 | 100.0% | | | | |
| Worked in | | | | | | | | |
| township of residence | 142 | 11.0% | 191 | 13.8% | | | | |
| county of residence | 847 | 65.9% | 870 | 62.6% | | | | |
| state of residence | 1,085 | 84.4% | 1,126 | 81.1% | | | | |

Source: U.S. Census (P045 Place of Work- State and County Level (1990), P048 Place of Work- Minor Civil Division Level (1990), P26 Place of Work- State and County Level (2000), P29 Place of Work-Minor Civil Division Level (2000).

Establishing the Transportation/Land Use Connection

The fundamental relationship between land use and transportation cannot be understated. Land use patterns and intensity influence the roadway network. Likewise, the roadway network can influence the land uses in a particular area. Just as new or expanded transportation systems create new access opportunities that attract new development, new development patterns create a need for additional transportation facilities. In fact, land use patterns and transportation patterns are linked in a continuing cycle, whereby transportation opportunities create an atmosphere for development which in turn generates additional transportation needs and so on.

This continuing cycle has been the traditional route by which most suburban areas have developed, including portions of the Newtown Area. For this trend to be broken, this primary relationship between land use and transportation must be recognized, understood, and exploited in order to create conditions where new growth and new transportation systems and/or improvements can occur together in a logical and designed manner. Establishing the link between land use and transportation can provide numerous benefits for the community. Some of these benefits include:

- Incorporating land use considerations into transportation planning can influence future development patterns and ensure that transportation facilities have adequate capacity to meet demand;
- Land use patterns that are matched to the transportation system can help relieve congestion and traffic on existing roads. Land use patterns that require buildings to be located closer to the roadway and/or are interconnected via shared parking areas can reduce the requirements of constructing new transportation facilities;
- Improved site design and incorporation of public transportation services can attract tenants and/or buyers;

- The incorporation of transportation improvements and/or public transportation will ease employee commuting, which will decrease employee lateness and increase productivity; and
- Providing the link between land use and transportation will reduce congestion, improve mobility, improve air quality, and preserve additional open space, all of which will help to create a more attractive and livable community.

Improving the linkage between land use and transportation planning is essential for the future of the Newtown Area. Inappropriate land uses coupled with inadequate transportation services create congestion and traffic impacts on both highways and local roads. They also cause worsening air quality conditions, decreased highway safety, and reduced community access. Furthermore, inefficient transportation access and unplanned land use patterns are also a significant hindrance to economic growth and productivity. The promotion of compact, mixed-use development may be one way to encourage less automobile-intensive uses.

Context Sensitive Solutions

In the not-so-recent past, transportation engineers and designers ignored the questions and concerns of the community while designing new transportation systems. The only goal these professionals focused upon was providing for the most efficient flow of traffic through an area. This way of thinking has led to crumbling of unique areas around the country that are now gone forever. Realizing the mistakes of the past has led these professionals and PennDOT to develop a better way – *Context Sensitive Solutions*. Context sensitive solutions look beyond the pavement to the function streets and highways perform in enhancing communities and natural environments. The concept was developed to help transportation professionals build safe and efficient roads with the participation of residents and local officials who ultimately will be affected by the new infrastructure.

Context sensitive solutions is a proactive approach to transportation planning, design, and implementation that looks at the extensive context streets and roads play 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.

Transportation planners must realize that every highway design project is unique. The setting and character of the area, the values of the community, the needs of the highway users, and the challenges and opportunities are unique factors that designers must consider with each highway project. Whether the design to be developed is for a fairly small safety improvement or 5 miles of new highway, there are no boilerplate solutions. For each potential project, designers are faced with the task of balancing the need for the highway improvement with the need to safely integrate the design into the surrounding natural and human environments. Important areas that warrant protection should be identified as transportation improvements are being planned.

Access Management

The Newtown Area has several arterial roadways designed for large volumes and high-speed traffic with access to abutting properties restricted. Controlling access to these roadways will allow them 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 constraint in traffic operations and transportation systems management.

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. It should be noted that 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 not to limit new development in order to expedite traffic flow. The access requirements of businesses that may relocate into an area must be taken into account, as well as those vehicles traveling through the area.

An access management 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.

Traffic Calming

Traffic calming measures are mainly used to address speeding and high cutthrough 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. To initiate traffic calming, the municipalities should develop specific policies. This process 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. However, traffic calming 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.

Pedestrians and Bicyclists

Walkability is the key to efficient ground 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 more liveable communities and lead to whole, happy, healthy lives for the people who live in them.

Through the provisions of the Jointure's subdivision and land development ordinance, the Jointure is able to ensure that 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, in the more rural areas where pedestrian use is anticipated, 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.

To see the benefits of promoting walkability within the Newtown Area, one need look no further than the Sycamore Street project. This project involved repaying of the road surface from end-to-end, new curbs and driveway aprons, concrete sidewalks in a decorative slate pattern, brick-patterned crosswalks, antique style street lights, and pedestrian amenities including benches and trash receptacles. This project is a good example of how changes in land uses in the area dictated the need for an improved transportation system that not only improved traffic flow but also provided for safe and effective pedestrian travel.

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 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 residents of the area, as well as people who work, shop, or visit in the area.

Public Transportation

The Newtown Area is currently served by one bus route of the Southeast Pennsylvania Transportation Authority (SEPTA). Route 130 runs from Bucks County Community College and Newtown Grant in Newtown Township to Franklin Mills Mall in Philadelphia. The service connects the college, the Newtown Business Commons and other areas of the township to the SEPTA R3 Regional Rail Line (Langhorne Station) and to employment and commercial centers in the southern part of Bucks County.

The Newtown RUSH is a fixed-route public transportation service operated by the Bucks County Transportation Management Association. It began servicing job centers in greater Newtown on October 3, 2005. The Newtown RUSH is funded by the federal Job Access and Reverse Commute grant program, which provides funding to agencies for the implementation of transit services that provide a "last mile" connection between existing transit services (in this case, the SEPTA R-3 at Woodbourne Station in Middletown Township) and suburban jobs. The service operates only during peak commuting hours as determined by the prevalent shift times at employment centers. The route services several employment centers in the Newtown area, including the Newtown Business Commons, Lockheed Martin, Silver Lake Executive Campus, ICT Group, and the Luxembourg Executive Campus. The Jointure should monitor and provide comment to the Bucks County TMA with regard to the bus service routes and schedule. Furthermore, the Jointure should actively promote and market the bus route as a feasible alternative to automobile use since the availability of public transportation is a benefit to all residents in the area.

The area was previously served by the Newtown Rail Line. The Newtown branch of the SEPTA R8 Regional Rail service was discontinued in the early 1980s. The use of outdated rolling stock, poor rail bed conditions, and diesel locomotion that was unable to use the center city tunnel led to a steady decline in ridership. Continual efforts to restore rail service along the line met with opposition, mainly due to the costs involved with electrification of the line. With these considerations in mind, Bucks County has undertaken a study to investigate the potential for the use of Bus Rapid Transit (BRT) for the area. Bus Rapid Transit can be defined as a flexible, rubber-tired rapid-transit mode that combines stations, vehicles, services, running ways, and Intelligent Transportation System (ITS) elements into an integrated system with a strong positive identity that evokes a unique image. Bus Rapid Transit applications are designed to be appropriate to the market they serve and their physical surroundings, and they can be incrementally implemented in a variety of environments. In brief, Bus Rapid Transit is an integrated system of facilities, services, and amenities that collectively improves the speed, reliability, and identity of bus transit. Bus Rapid Transit, in many respects, is rubber-tired light-rail transit (LRT), but with greater operating flexibility and potentially lower capital and operating costs. The Jointure should monitor the results of this study for possible inclusion into their transportation planning programs. If the BRT concept proves to be feasible, the Jointure should ensure that proper land use planning is performed to allow for the necessary infrastructure (e.g., transit terminal, park and ride lot) associated with construction of the facility.

Another existing, but underutilized rail line which traverses the Newtown Area is the New Hope/Ivyland Railroad. Currently, the R2 Commuter Railroad owned and operated by SEPTA ends its service at the Warminster Train Station, just south of Ivyland Borough. However, the existing rail line continues all way to New Hope Borough passing through Wrightstown Township. At this time, the New Hope/Ivyland Railroad operates a tourist-based operation with scenic train rides. Efforts are underway by the Bucks County Transportation Management Association to determine the feasibility of extending commuter rail service all the way to New Hope Borough. While it is uncertain where potential station locations would be located, it would be reasonable to assume that the existing station in the Village of Wycombe could be a rational choice.

Functional Classification

The region's road system should be viewed as an integrated network of roadways with types of roads serving different functions and having different design criteria. Higher-order roads serve to convey traffic through the community and lower-order streets provide access to abutting properties. Other intermediate-order roads provide links between the higher-order roads while providing some access to properties.

Design standards for existing and new roads are included in the municipal subdivision and land development ordinance. It is important that street standards result in roads which complement the desired character for various parts of the community. The classifications are described as follows:

- 1. Thoroughfares
 - a. Expressway—a highway designed for large volumes and highspeed traffic and with access limited to grade-separated intersections. The Newtown Bypass is the only expressway in the area.
 - b. Principal Arterial—a continuous route which has trip length and travel density characteristics indicative of substantial statewide or interstate travel and has a right-of-way width of 120 feet. Route

413 and portions of Route 532 and Swamp Road are examples of a principal arterial in the area.

- c. Minor Arterial—a route that provide interstate and intercounty service and has a right-of-way of 120 feet. Some examples of a minor arterial include portions of Route 532, Swamp Road, and Taylorsville Road.
- d. Scenic Route—a roadway with limited access that maintains a narrow cartway for scenic travel and not intended to provide a level of service for intercounty or interstate transportation and has a right-of-way of 100 feet. River Road (Route 32) is the only Scenic Route within the Newtown Area.
- e. Major Collector—a route which should link places of traffic generation with nearby larger towns or with more important intracounty corridors and which has a right-of-way of 100 feet. The portion of Route 232 between Route 413 and the Solebury Township line is the only Major Collector within the area.
- f. Minor Collector—a route which is provided at intervals, consistent with population density, to collect traffic from local streets and which has a right-of-way of 80 feet. There are several Minor Collectors in the Newtown Area including Park Avenue, Pine Lane, Pineville Road, Eagle Road, Woodhill Road, Stoopville Road, and Wrightstown Road.
- 2. Local Streets
 - a. Feeder Streets—a street designed to function as an intersector and intracounty facility, serving as a feeder route to the arterial system and also serving intertownship travel with a right-of-way of 70 feet. Several Feeder Streets exist within the area including Wrights Road, Penns Park Road, Cherry Lane, Brownsburg Road, Street Road, Lurgan Road, and Highland Road.
 - b. Local Street—a street designed to serve the properties fronting thereon, generally to discourage through traffic, and which has a right-of-way of 50 feet. Local Streets are typically roads found within subdivisions and all roads which do not meet the definitions as described above.

Under a functional classification system, new roads will be built to standards which their function requires. Where possible, existing roads should be improved so that they can function as intended. For some roads, it is unlikely that they will be redesigned to carry large amounts of traffic without interruptions by frequent curb cuts. In these areas, access management improvements should be investigated to minimize delay and conflict points. The intended road function should be kept in mind when land uses are proposed.

Transportation Improvement Program

The Bucks County Transportation Improvement Program (BCTIP) is 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. It is then submitted to the Delaware Valley Regional Planning Commission (DVRPC) to be included as candidate projects for the regional TIP. The regional TIP is updated every two years, in coordination with 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 TIP's) submitted by the member governments. The TIP is then submitted to the DVRPC Board for their approval. Once approved, the TIP is then submitted to PennDOT to be included in the state TIP.

| MPMS# | Location | Description | Construction Year |
|---|-------------------------------|-------------------------------|--------------------------|
| Newtown Township | | | |
| 13357 | Route 332 | Bridge Replacement | 2005 |
| 13518 | I95/Route 332 | On ramp construction | 2006 |
| 57628 | Sycamore Street | Rehabilitation/Beautification | 2005 |
| 57639 | Newtown-Yardley Rd | Penn Trail Intersection | 2005 |
| <u>Wrightstown Township</u> 57625 Route 232/Swamp Rd Truck Lane/Realignment 2006 | | | |
| 64780 | Swamp Road | Corridor Improvement | 2008 |
| | efield Township River Road | Bridge Replacement over PA | |

As of the 2005–2008 DVRPC TIP, the projects in the Newtown Area include the following:

Transportation Enhancements Program

The Transportation Enhancements Program, sponsored by PennDOT and managed through the Delaware Valley Regional Planning Commission (DVRPC), is designed to fund projects to enhance the transportation experience, to mitigate the impacts of transportation facilities on communities and the environment, and to improve community character through transportation-related improvements. Upper Makefield Township received a grant through this program to fund ADA ramps, sidewalks, crosswalks and streetscape improvements to link several detached state-owned recreation and historic sites in Washington Crossing.

Transportation Impact Fees

Transportation impact fees are charges imposed on new development to help pay for off-site impacts and costs of development. In principle, impact fees should be based on projections of municipal costs that are reasonably related to the impacts of a particular development. A 1990 amendment to the Municipalities Planning Code (MPC) Act 209 added Article V-A, which allows a municipality to impose transportation impact fees for certain limited off-site, transportation-related improvements. The amendment authorizes the imposition of traffic impact fees to recover the cost of off-site road improvements necessitated by and attributable and directly related to new development.

In order to begin assessing traffic impact fees, a transportation study must be performed. Elements of the study include the establishment of growth areas, calculation of future land development activity and capacity, an assessment of the impact of existing and projected future traffic on the roadway network, and capital improvements planning. Specifically, the study involves review of existing and projected future traffic conditions, development of a Land Use Assumptions Report, preparation of a Roadway Sufficiency Analysis and a Capital Improvements Plan.

The land use assumptions report involves the review of existing and projected development, types of land uses, densities, and population growth. The roadway sufficiency analysis involves establishing existing and preferred levels of service for intersections within the study area. Needed transportation improvements will be attributed to new development, pass-through trips, or existing development and will be identified in the capital improvements plan. A preliminary implementation schedule and budget for the recommended infrastructure improvements should also be developed as part of the capital improvements plan.

Newtown Township currently assesses traffic impact fees under Act 209. Upper Makefield Township conducted a feasibility study for such fees in 2001. If it is deemed appropriate based on previous findings or projections of future conditions, Wrightstown Township and Upper Makefield Township should evaluate Act 209 traffic impact fees as a means of providing infrastructure improvements brought on by new development in their townships.

Land Use Plan

One of the most important purposes of this update is to provide a land use plan that prescribes an appropriate land use mix that adequately balances meeting community needs, protecting the natural environment, and designating suitable areas for potential growth. Providing a well-balanced mixture of agricultural, residential, commercial, recreational, institutional, and industrial uses in appropriate locations also enhances the vitality of the community. The plan should help to ensure that the Jointure's land use regulatory system is based on sound planning and growth management principles.

In the resident survey conducted as part of the comprehensive planning process, proper growth management was far and away identified as the most important problem facing the Jointure when planning for its future. This section provides a community vision for future growth and development in the Jointure that attempts to address this concern; it serves as a collective statement by the Jointure communities concerning how they wish to accommodate and direct future development. Specific planning tools are discussed that promote the concentration of future development within appropriate areas of the community while enhancing the preservation of its valuable natural, agricultural, open space and historic resources.

Three major influences have played important roles in shaping the Jointure's future land use plan: the development district concept, the provisions of the Municipalities Planning Code regarding intergovernmental cooperative planning, and past planning in the Jointure as presented in previous plans and updates.

Important Influences on this Update

Development District Concept

A planning tool used widely in Bucks County to guide growth is the development district concept. The fundamental objective of this concept is to concentrate future development in areas best equipped to handle growth while minimizing land use conflicts and costs to residents. To accomplish this objective, the concept calls for concentration of growth into development areas designated by municipal officials for this purpose. While the development district concept allows municipal officials to plan for the timely expansion of development, infrastructure, and municipal services, it also enables them to preserve significant vacant, agricultural, and natural resource lands as open space.

Article XI of the Municipalities Planning Code

Enacted as part of Act 67 in 2000, Article XI of the Municipalities Planning Code permits the use of intergovernmental cooperative agreements by local governments to develop and implement multimunicipal plans. Although the provisions of Article XI replaced earlier regulations governing joint municipal planning, Section 1107 of Article XI specifically states that earlier regional planning agreements are not invalidated and can continue to function under the new regulations. Section 1103(a)(1) allows comprehensive plans to designate growth areas where projected development can be accommodated, where commercial, industrial and institutional uses can be located, and where services for such development can be planned for or provided. Section 1103(a)(2) states that such plans may designate future growth areas. Section 1103(a)(3) permits plans to designate rural resource areas where rural resource uses are planned, where the permitted density of development is compatible with rural resource uses, and where infrastructure extensions and improvements will not be publicly financed unless the participating municipalities agree that such services are necessary or appropriate.

Prior Planning in the Jointure

The 1983 joint municipal comprehensive plan's provisions for higher density housing were based on the Development District Concept, and high density housing was directed to areas called Residential Development Areas in that plan. The 1997 Update identified and described 11 categories of planning areas. The delineation of these areas indicated both the pattern and relative intensity of various residential and nonresidential uses. It attempted to balance projected growth with existing land use patterns, community goals, and environmental determinants. It was also intended to provide a comparative planning tool for use in the establishment and review of zoning districts included in the joint municipal zoning ordinance and included high density residential areas in all three communities.

The Land Use Plan

This land use plan retains the planning areas delineated in 1997, but updates land use planning in the Newtown Area by revising the location of the planning areas found in the Jointure and designating them as being a part of either designated growth areas or rural resource areas in a manner consistent with the development area concept and the provisions of the MPC.

Designated Growth Areas—These areas are intended to accommodate the bulk of future development and infrastructure expansion. They are designed and sized to contain projected future growth, including infill and adaptive reuse opportunities. Thus, development areas also include areas that have been previously developed.

Rural Resource Areas—These areas include lands that require special resource protection. They contain critical natural resources including large expanses of woodlands, wetlands, hydric soils, and prime agricultural farmland. Rural resource uses are intended to predominate in these areas at appropriate densities with only limited publicly financed infrastructure to be provided.

Planning Areas in the Rural Resource Areas include the following:

1. Jericho Mountain Conservation Area

2. Conservation Management Areas

Planning Areas in the Designated Growth Areas include the following:

- 3. Low Density Residential Areas
- 4. Medium Density Residential Areas
- 5. High Density Residential Areas
- 6. Neighborhood Conservation Areas
- 7. Commercial Areas
- 8. Office and Research Areas
- 9. Industrial Areas
- 10. Quarry Areas
- 11. Public Purposes Planning Areas

Permitted uses, allowable densities and all other pertinent standards for each planning area are specified in the respective zoning districts contained with the Newtown Area Joint Municipal Zoning Ordinance.

Jericho Mountain Resource Protection Area

The fragile ecological characteristics of this planning area and its numerous critical resources, combined with its unique scenic and historical value, require that this area be protected. The limited groundwater resources of this area's Diabase geology are recognized as a significant constraint to development. These conditions have warranted the area's designation as a special zoning district with development standards which will help ensure the preservation of its ecology. Protection is also provided through the environmental performance standards of the zoning ordinance. As environmental science improves our understanding of nature and provides improved techniques for its protection, conditions in this area could be monitored and additional regulatory measures could be applied as determined necessary or appropriate.

At the present time the zoning district governing these areas permits single-family detached cluster housing as a permitted use at a density of 0.2 dwelling units/acre (du/ac). Although this permitted density does not appear to provide any significantly greater incentive for development when compared to the regulations governing single-family detached dwellings (minimum lot size of 5 acres), the use may not be appropriate in this area. Detached cluster developments might encourage the proliferation of community sewage disposal systems with stream discharge since steep slopes found throughout this area may preclude systems utilizing land application. Large lot developments may also be less visually obtrusive, especially if low impact development techniques (e.g. site fingerprinting, minimum disturbance¹) are required. In addition, the current minimum lot

¹ Site fingerprinting reduces the total amount of disturbance of a site by limiting grading and clearing for a subdivision to areas where structures, roads, and rights-of-ways are required. Grading and clearing can be further reduced by using shared driveways, designing roads to follow open paths in vegetation, and avoiding additional disturbance for material storage areas. Minimum disturbance techniques further reduce impacts by using alternative construction techniques. Heavy equipment will typically compact soil (increasing imperviousness) and damage root systems. Minimum disturbance techniques use a carefully delineated disturbance area

area for the single-family detached dwelling use (5 acres) may not be adequate to protect the natural resources characteristic of this area. An increase in the minimum lot size for such development may be warranted if justifiable.

Non-residential uses permitted as conditional uses in these areas include recreational facilities, child care facilities and schools. The use regulations for recreational facilities, which appear to permit both active and passive recreational activities, allow facilities (such as athletic fields) that may disturb the aesthetic and environmental resources (such as woodlands and steep slopes) of the area. Certain types of child care facilities, such as "employer day care," may also not be appropriate for an area where non-residential uses are generally not permitted. Schools, which require intensive land use and generate increased traffic, may not be suitable in this resourceladen part of the Jointure.

Horticulture and Agriculture is also a permitted use in the zoning district for these areas. Regulations for this use could be revised to include accessory uses to agriculture that are both appropriate to this district and that would permit activities which would promote the continuation of whatever agricultural activities are found in these areas.

Conservation Management Areas

This area, much of which is at a distance from development areas, generally lacks sufficient highway capacity and adequate municipal facilities to support intensive development. It also includes a variety of important natural resources, including aquifer recharge areas. This area shall be reserved for low intensity uses in order to encourage the continuation of farming, to provide for groundwater recharge and to provide a balance in land uses throughout the Jointure between these areas and the more extensively developed portions of the community located near the Borough of Newtown and in the other development areas of the three townships.

The Residential Development Area Analysis discussed in an earlier section of this update indicates that 29 percent of residential development in Upper Makefield, 42 percent of residential development in Wrightstown Township and 65 percent of such development in Newtown Township occurred outside of the residential development area, as defined in that section, between 2000 and 2005. Much of that residential development should be channeled away from conservation management areas.

Efforts to channel growth away from conservation management areas would include an examination of the residential development options permitted in the CM Zoning District, which governs this area. Removing the performance subdivision use from the list of uses permitted by conditional use may assist in directing higher density development into designated growth areas. The detached cluster option may need to be

and through low impact construction practices attempt to preserve unstable soils and maintain a site's hydrologic function. Minimum disturbance techniques have the added benefit of reducing construction costs due to the decreased need for site grading.

constructed in a manner that ensures there is parity among development options in terms of density in the CM District. Any changes in use regulations must be coordinated with sewage facilities planning to ensure that package treatment facilities that may be needed are required to explore land application options and rule out their feasibility before any type of stream discharge option is permitted, especially since this area is intended to provide water recharge opportunities (as noted in the Community Facilities section of this plan). The potential yields of units for proposed developments should be dependent on the amount of land required to provide land application sewage disposal for any proposals located in this area.

As described above for the Jericho Mountain Resource Protection Area, certain nonresidential uses such as schools and certain childcare are facilities may not be appropriate for conservation management area.

Additional mechanisms may provide for the preservation of agricultural resources and the promotion of the continuing viability of farming in this area. Certain communities with agricultural preservation zoning not only require that a certain percentage of farm soils be preserved (as is currently required in the Jointure), but also mandate specific subdivision options for parcels where a certain amount of such soils are found. Along with allowing the subdivision of a large agricultural lot into smaller farms, these options include the subdivision of a site into large estate lots, smaller residential lots or non-residential lots provided that a farmland preservation tract is also provided. Agricultural soils intended for preservation must be located on that tract whose size, dimensions and access to roadways (as regulated in the ordinance) make it an attractive parcel to farm. As indicated above for the Jericho Mountain Resource Protection Area, permitting and regulating suitable accessory uses to agriculture may enhance its viability and presence as an important characteristic of the Newtown Area.

Low Density Residential Areas

A range of low density residential uses shall be accommodated in this planning area in the more rural portions of the region adjacent to several of the Jointure's villages. It is intended to maintain the existing low density neighborhoods while providing the opportunity for future development, at similar intensities, as part of the designated growth area. Allowable density varies depending upon the type of residential development and the amount of open space proposed, from a density of 0.82 du/ac for single-family clusters to 1.22 du/ac for performance subdivisions. Single-family detached dwellings are permitted on a minimum lot size of one acre.

Medium Density Residential Areas

A range of medium density residential uses shall be permitted within the portions of the region designated as medium density residential areas. Allowable density varies from 3.22 du/ac for performance subdivisions in the CR-2 Zoning District portion of the Medium Density Residential Area to 1.22 du/ac for single-family clusters in the R-1 Zoning District portion. Single-family detached dwellings are permitted on a minimum

lot sizes ranging from 30,000 square feet to 60,000 square feet. Decisions regarding what types of sewage disposal systems may be appropriate in this area, including alternative systems and community systems, will be based on the recommendations and requirements of the Act 537 plans and any other studies or analyses carried out or required by the Jointure municipalities.

High Density Residential Areas

High density residential areas are designated in several parts of the Jointure. Several of these areas adjoin neighborhood or community commercial areas and have proximity to adequate highways, existing municipal infrastructure and other related services. They are located in Newtown Township surrounding the traditional regional center, Newtown Borough, and in Upper Makefield Township in the Taylorsville-Washington Crossing area. The Newtown Grant development is designated as a high density residential area, as is a portion of Upper Makefield on Creamery Road and several parts of Wrightstown Township on Swamp Road near Rushland.

Higher density residential development is permitted on parcels available for development in these areas. Allowable density varies from 3.90 du/ac for mixed residential developments, mobile home parks and elderly housing to 1.85 du/ac for single-family clusters. Single-family detached dwellings are permitted on a minimum lot size of between 30,000 and 50,000 square feet. Provisions for higher density housing have been adapted to incorporate village planning and traditional neighborhood design as forms of development that can establish communities (rather than suburban subdivisions without the amenities of neighborhoods) as found in the region's villages and in Newtown Borough. While it is not anticipated that the historic architecture would be replicated in new developments, the character and scale of traditional neighborhoods should be achieved. A variety of residential development types are permitted, but the layout typical of conventional subdivision should be avoided. New development in these areas should be sensitive to the historic resources described in this update; they should also incorporate the village planning guidelines.

Decisions regarding what types of sewage disposal systems may be appropriate in this area, including alternative systems and community systems, will be based on the recommendations and requirements of the Act 537 plans and any other studies or analyses carried out or required by the Jointure municipalities. Sewage planning for villages should return treated wastewater to the groundwater resources of the region.

Neighborhood Conservation Areas

Neighborhood conservation areas consist of concentrations of residential and mixed use development which were developed prior to the advent of municipal comprehensive planning and zoning. These areas include historic villages located in both Upper Makefield and Wrightstown townships. These planning areas shall provide for predominantly residential development which is consistent with present day design standards and use requirements, yet compatible with the existing neighborhood character. Mixed-use development shall be permitted in these areas, where appropriate, in a manner that preserves the form and function of village areas and contributes to the preservation of historic structures. Historic resources in these areas should be preserved and documented, and development in or near villages should be consistent with the village planning techniques.

Commercial Areas

Commercial areas in the Jointure are located in Newtown Township in the vicinity of Newtown Borough, near the Taylorsville-Washington Crossing area in Upper Makefield and in the vicinity of Anchor and Penns Park in Wrightstown Township. The various commercial areas indicated on the plan permit development consistent with the function (i.e. neighborhood or community commercial areas) for which they are intended in a manner consistent with the land use policies discussed in this plan. Commercial areas in the Jointure are not intended to function as regional commercial centers featuring sprawl or strip-mall forms of development, but as sub-regional community commercial areas and residents.

Office and Research Areas

The typical large lot area requirements associated with corporate headquarters, administrative offices and research facilities are provided for within this planning area of Newtown Township near the 1-95 Interchange. Interim low intensity uses, such as various agricultural activities, are also permitted in this area by the zoning ordinance. Residential uses permitted by the zoning ordinance may also be appropriate in the portion of these areas north of the Newtown By-Pass; such uses should generally not be permitted in the office and research areas south of the By-Pass. Other, smaller office and research areas near the Newtown Township Municipal Building and in Anchor in Wrightstown Township provide areas to accommodate office and professional uses intended to meet the needs of the region's residents and businesses.

Industrial Areas

Since the enactment of the 1983 joint municipal comprehensive plan, the portion of the Jointure judged most suitable for industrial and related development has been located in the Newtown Business Commons. A wide range of industrial-related uses are provided for within this planning area due to proximity to supporting services and facilities.

Industrial areas have also been designated in Wrightstown Township to accommodate comparable forms of industrial development. It is envisioned that any needed services and facility improvements required for industrial uses will be provided by the developers of those sites. Sewage facilities in these areas must be consistent with Wrightstown Township's official sewage facilities plan and any other studies conducted by the township or the Jointure.

Quarry Areas

Areas delineated in this plan for quarry activity recognize existing uses. Appropriate safety and setback requirements are intended to ensure these intensive uses are compatible with the residential and agricultural uses permitted in surrounding areas. Upon termination of quarry activities within each area, reclamation shall be undertaken and completed in a timely and appropriate manner in accordance with the Pennsylvania Surface Mining and Reclamation Act.

Public Purpose Areas

These areas are intended to accommodate the significant uses of land devoted to public and institutional purpose. These include the parks and open space areas owned and managed by the Commonwealth of Pennsylvania, the County of Bucks and the municipalities of the Jointure. Various educational facilities, including the Bucks County Community College, the schools of the Council Rock School District and St. Andrew's Elementary School, are incorporated into these planning areas. Various facilities and properties of the participating municipalities are also included.