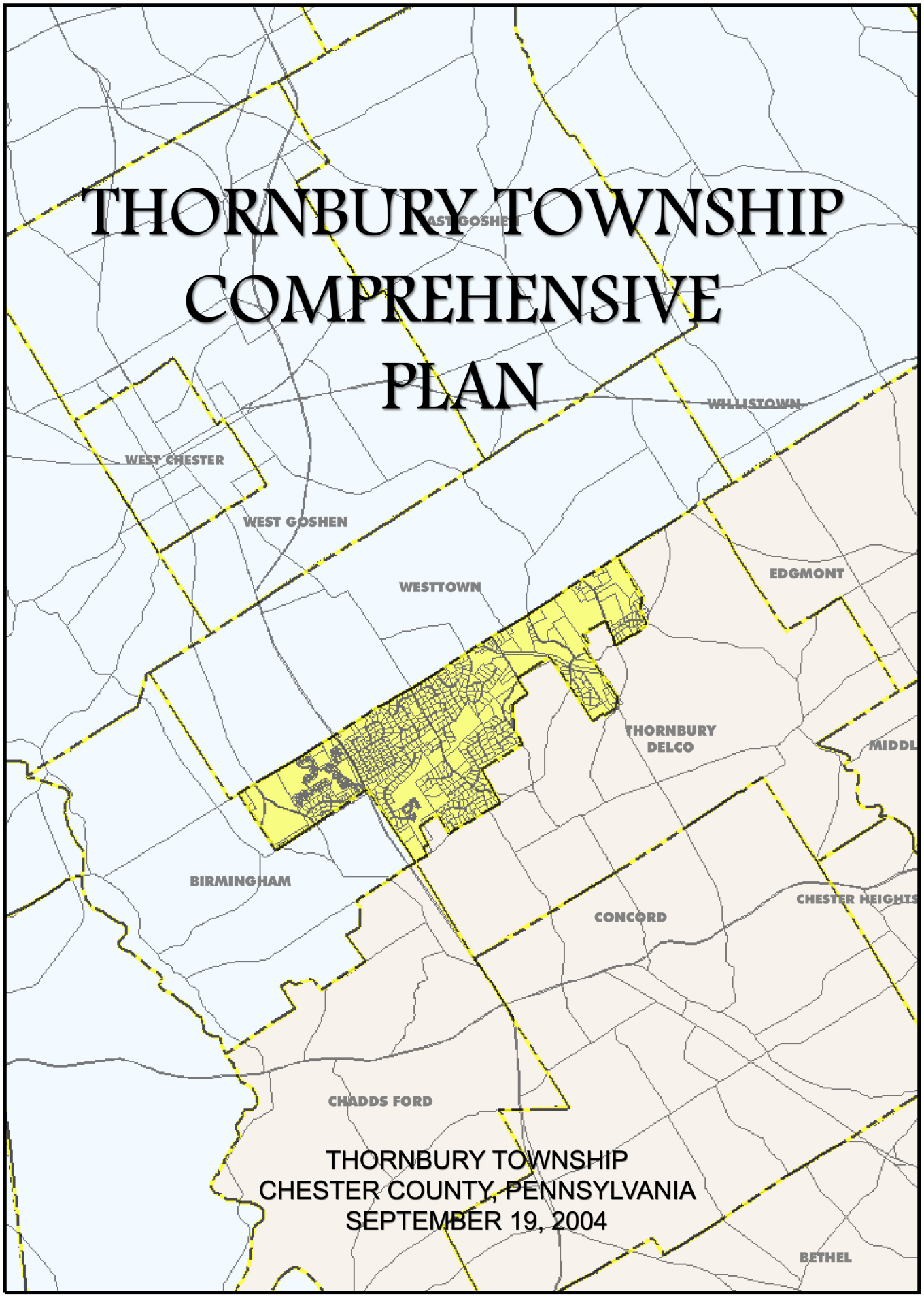
THORNBURY TOWNSHIP COMPREHENSIVE PLAN



THORNBURY TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
SEPTEMBER 19, 2004

THORNBURY TOWNSHIP COMPREHENSIVE PLAN

CHESTER COUNTY, PENNSYLVANIA

FINAL PLAN

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September 19, 2004

COMPREHENSIVE PLAN FOR THORNBURY TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Thornbury Township
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FINAL PLAN

ADOPTED: September 19, 2004

This Comprehensive Plan was prepared by the Thornbury Township Comprehensive Plan Update Task Force with technical assistance provided by Ray Ott & Associates. Funding was provided, in part, through a grant from the Vision Partnership Program sponsored by the Chester County Board of Commissioners. The Comprehensive Plan has been prepared in conjunction with the principals of the County's policy plan, Landscapes, as a means of achieving greater consistency between local and county planning programs.

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1. INTRODUCTION, GOALS & OBJECTIVES

This update of the Thornbury Township Comprehensive Plan (Plan) makes Thornbury Township (Township) consistent with the goals and objectives included in county policies, will provide the Township with an opportunity to proactively implement policy objectives that will positively influence its future, and will seek to promote responsible land use and environmental stewardship. In addition, this update incorporates the vision for the future development of the Township as expressed by Township residents.

It is further recommended that this Plan be reviewed and updated by the Planning Commission every three (3) years to keep it current with natural and environmental changes. Moreover, it is recommended that progress against the tasks identified in Chapter 8 be reviewed each year and an annual plan for task completion be formulated at the beginning of each year. The ultimate time horizon for this Plan is ten (10) years; the implementation strategies set forth in Chapter 8 should be completed by this time and the plan should be reviewed again in 2014, in accordance with the Pennsylvania Municipalities Planning Code (MPC) requirements.

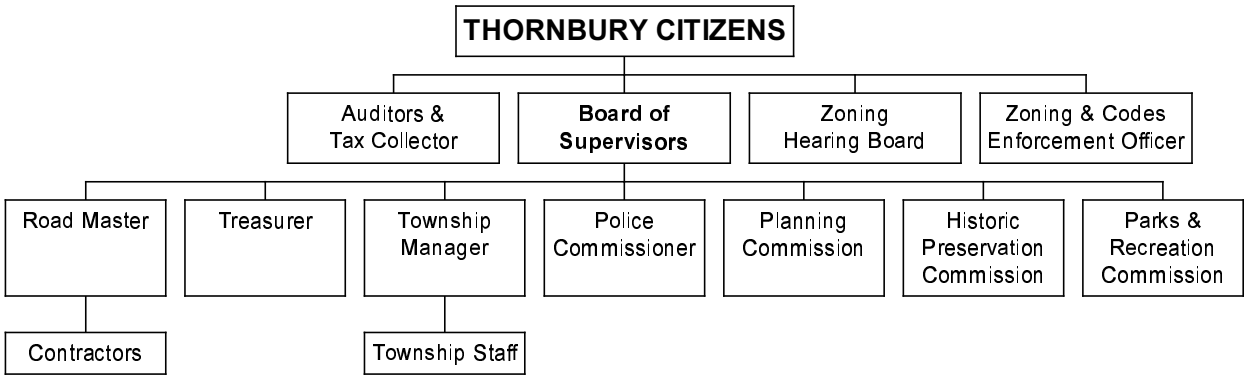
This chapter provides introductory information about the Township; the definition, history, purpose, content and adoption process of the Plan; and the goals and objectives of the Plan.

A. THORNBURY TOWNSHIP

Thornbury Township is located approximately 25 miles southwest of Philadelphia, in the southeastern portion of Chester County. It is bordered on the north by Westtown Township, Chester County; on the south and east by Thornbury Township, Delaware County; and on the west by Birmingham Township, Chester County. A major north-south transportation route, U. S. Rt. 202, passes through the western portion of the Township and a major regional east-west route, PA Rt. 926, forms its northern border. Map 1A shows the Township's location in relation to its surrounding areas.

The Township is approximately 3.9 square miles in area and is classified as a second class township with a population of 2,678 (according to the 2000 census). As a second class township, Thornbury is governed by an elected five (5) member Board of Supervisors (BOS), with the assistance of an appointed full-time Township Manager who oversees the Township staff. The BOS appoints solicitors to represent the Township, the Planning Commission, and the Zoning Hearing Board. Additional appointed professional consultants include a Township Engineer, Township Planner and a Codes Enforcement Officer / Building Inspector. Other elected positions include Auditors and the Tax Collector. The organizational structure of the township is presented below.

Township Organizational Chart



Pennsylvania townships can be organized as 1st Class, 2nd Class or Home Rule townships. There are currently 91 first class, 1,457 second class, and 27 home rule townships in Pennsylvania.

The primary difference between first and second class townships is structural. In townships of the first class, the governing body is made up of elected 'commissioners.' There are either five commissioners elected at large or up to 15 elected by wards. The commissioners have four year overlapping terms. The governing body of second class townships is composed of three 'supervisors' who are elected at large. Two additional supervisors may be elected if approved by referendum. All are elected at large for six year terms.

Home Rule gives municipalities -- cities, boroughs and townships -- the power to determine for themselves what structure their government will take and what services it will perform. A home rule municipality no longer has its powers and organization determined by the state legislature. A home rule municipality drafts and amends its own charter and can exercise any power or perform any function not denied by the state Constitution, the General Assembly or its home rule charter.

Other elected township officials include the tax assessor, tax collector (second class), three auditors or controller, and a treasurer (first class). Appointive officers include the secretary, township manager if desired, chief of police, fire chief, engineer, solicitor and others.

To become a township of the first class, a second class township must have a population density of 300 persons per square mile *(Thornbury currently has 693 residents per square mile)*, and voters must approve change of classification in a referendum. Many townships meeting the density requirement have remained second class. Since 1972, twelve townships of the first class have adopted home rule charters.

B. COMPREHENSIVE PLAN

Definition

A comprehensive plan is a document that sets forth municipal goals, objectives and policies that guide future growth and development.

History

The existing Thornbury Township Comprehensive Plan was incorporated into the township code in 1983 and contained recommendations for land use and infrastructure requirements intended to be “reviewed and updated periodically.”

Purpose

The MPC requires that municipal comprehensive plans be “generally consistent” with the policies of county comprehensive plans.

Accordingly, an update of the existing comprehensive plan was required in order to define goals and objectives consistent with those in the following county policies:

- *Landscapes: Managing Change in Chester County 1996-2020.* Adopted in 1996 as a Chester County Comprehensive Plan Policy Element, it addresses growth management, natural resources conservation, and infrastructure requirements. As described in Landscapes, the Township contains primarily suburban and natural landscapes and it is the goals related to these types of landscapes with which the Township must be generally consistent;
- *Linking Landscapes: A Plan for the Protected Open Space Network in Chester County*. Adopted in 2002 as a component of the overall Chester County Comprehensive Plan, it addresses strategies for permanently protecting open spaces;
- *Watersheds: An Integrated Water Resources Plan for Chester County, Pennsylvania and its Watersheds*. Adopted in 2002 as a water resources planning element of Landscapes, it addresses goals, recommended strategies and guidance for municipalities and other entities to support sound land use and water resources management.

Plan Content

The contents of the Plan are derived from several sources including MPC requirements, input from Township residents, and documented inconsistencies with county policy documents.

MPC Requirements

The MPC, Article III, "Comprehensive Plan", Section 301 states that comprehensive plans should include maps, charts, and text regarding the following plan elements:

A statement of community goals and objectives concerning the timing, location and character of future development:

- A plan for land use identifying the amount, intensity, character and timing of land use;
- A plan to meet the housing needs of present and future residents, as well as accommodating new housing in different dwelling types and at appropriate densities for households of all income levels;
- A transportation plan;
- A statement of the interrelationship of plan elements and of the plan to contiguous communities, including an assessment of the land use plans of adjacent municipalities;
- A community facilities plan;
- A discussion of short- and long-range implementation strategies;
- A plan for the protection of historic and natural resources; and
- A water facilities plan.

Public Participation Input

This Plan incorporates the vision for the future development of the Township as expressed by Township residents in a series of public meetings. Additional input was obtained from a citizen survey distributed in the Township newsletter, Take A Gander, and posted on the Township web site (www.thornburytwp.com), and from personal interviews with interested residents.

Topics covered included:
- Public Facilities and Services
  - Emergency Services

- Library
- Recreation
- Sewer and Water
- Trash Collection

- Neighborhoods / Community Life
  - Significant Features / Attractions
  - Opportunities and Needs
- Environmental Resources
  - Historic / Cultural
  - Scenic Roads
- Rt. 202 Corridor
- Transportation
  - Traffic Circulation
  - Pedestrian / Bicycle Circulation
  - Public Transit

See Appendix A for more details of the public participation process and the results obtained.

Inconsistencies with County Policies

The Township was found to be inconsistent with Landscapes in several areas, as set forth in the County Vision Partnership Program Final Consistency Review Report (April 24, 1997):

- The lack of scenic road protection in the Subdivision and Land Development Ordinance or elsewhere is inconsistent with *Landscapes' Scenic Resources Objective*.
- The lack of historic resource protection through either the creation of Act 167 districts or zoning districts is inconsistent with *Landscapes' Historic Resources Objective.*
- The lack of specific provision for special needs housing (such as senior citizen specific units) in the Zoning Ordinance is somewhat inconsistent with *Landscapes' Special Needs Housing Objective*.
- The lack of a requirement for new development to either dedicate open space or pay a fee-in-lieu of dedication in the Subdivision and Land Development Ordinance is somewhat inconsistent with *Landscapes' Parks and Recreation Objective*.
- The traditional "pipe and basin" requirements for stormwater management in the Subdivision and Land Development Ordinance, rather than the use of the more natural "best management practices" approach that stresses groundwater recharge and filtration of runoff is inconsistent with *Landscapes' Sewer and Water Facilities Objective.*
- Although the Township is meeting legal requirements for solid waste disposal, the lack of a Township-wide solid waste management plan, with an emphasis on recycling, is somewhat inconsistent with *Landscapes' Solid Waste Management Objective.*

Plan Topics

This Plan addresses the following topics:

- Demographics and Housing (Chapter 2)
- Land Use and Zoning (Chapter 3)
- Transportation and Circulation (Chapter 4)
- Environmental, Cultural and Historic Resources (Chapter 5)
- Community Facilities and Services (Chapter 6)

- Plan Recommendations (Chapter 7)
- Short and Long Range Implementation Strategies (Chapter 8)

Adoption Process

In order for this Plan to be adopted and become township policy, the township must adhere to the following series of steps prescribed in the Municipalities Planning Code:

- The Thornbury Township Planning Commission presents the *Draft Plan* at a public meeting. *(As part of the County grant conditions, the Draft Plan is also forwarded to the Chester County Planning Commission for review and comment under the County Vision Partnership Program.)*
- The Planning Commission meets to discuss and approve changes to the *Draft Plan* to address comments at the Public Presentation and from the County Vision Partnership review. The Planning Commission recommends the *Final Draft Plan* to the Board of Supervisors.
- At least forty-five (45) days prior to the public hearing, the Board of Supervisors distributes copies of the *Final Draft Plan* to the Chester County Planning Commission, adjacent municipalities [Westtown, Birmingham, and Thornbury (Delco) Townships], and the West Chester Area School District for review and comment. Review comments from the County, School District and adjacent municipalities shall be made to the BOS within forty-five (45) days of receipt of the *Final Draft Plan*.
- The BOS holds a public hearing on the *Final Draft Plan* pursuant to public notice.
- The BOS votes to adopt the Plan by resolution.
- The BOS approves and publishes the Plan.

C. PLAN GOALS AND OBJECTIVES

The goal statements included in this Plan are utilized to formulate specific land use and infrastructure policies, objectives and implementation strategies. They are organized according to the following seven (7) headings that reflect the MPC technical requirements for Plans and specific areas of concern indicated during the public participation process:

Community Character *– Preserve and enhance visual quality, streetscape development and general public space.*

Goal	Objectives
Provide for the maintenance of the Township's streetscapes, public spaces and existing neighborhoods.	1. Enhance and improve the U.S. Rt. 202 corridor: a) Encourage the use of visual buffering and noise abatement from adjacent/nearby residential neighborhoods; b) Encourage a non-stop flow of U.S. Rt. 202 traffic through the Township; c) Discourage the use of Township residential roads as alternatives to U.S. Rt. 202. 2. Identify current significant landscapes and scenic areas in the Township. 3. Designate scenic roadways through the Township and develop criteria and tools to help ensure the maintenance of their scenic qualities. 4. Require development specific initiatives to relate lots and buildings to the specific conditions of the site, including both natural and man-made resources.

Environmental, Cultural And Historical Resources *-- Preserve and enhance the natural, cultural and architectural integrity of the Township, including parks and open space, historic structures and natural resources.*

Goal	Objectives
Preserve and protect existing natural landscapes and historic resources in a manner consistent with the Chester County Comprehensive Plan, *Landscapes.*	1. Identify and map all significant natural resources and recognized historic resources in the Township. 2. Provide subdivision and land development design techniques and incentives that encourage the protection and enhancement of environmental resources. 3. Develop a list of planning tools that provide incentives and requirements for the protection and preservation of historic resources.

Land Use *-- Review existing and future land development issues.*

Goal	Objectives
Provide for future development in a manner that will protect and enhance the general welfare and quality of life in the Township.	1. Guide the location and intensity of future development to protect existing neighborhoods, public spaces and commercial facilities. 2. Coordinate future land development with the logical and efficient extension of public utilities and services. 3. Identify areas for and appropriate uses for infill development. 4. Ensure that commercial development along the U.S. Rt. 202 corridor does not detract from the quality of life in the adjacent residential neighborhoods. 5. Support and participate in regional planning efforts.

Transportation *– Adopt the regional circulation plan and the need to address public transit alternatives, pedestrian and bicycle circulation, and traffic congestion.*

Goal	Objectives
Provide and maintain a high quality, safe road network that serves the needs of all residents and encourages the development of alternative modes of transportation, including rail and bus service.	1. Inventory existing transportation and road improvement needs. 2. Identify and recommend transit-oriented development techniques where appropriate. 3. Identify and recommend traffic calming techniques in the Township to ensure the safe movement of vehicles through residential areas. 4. Investigate opportunities to create pedestrian trail and bikeway linkages between residential neighborhoods and community facilities. 5. Prepare a pedestrian and bicycle circulation plan for the Township. 6. Implement mechanisms to require new development to accommodate pedestrian and bicycle circulation. 7. Coordinate planning with neighboring communities to enhance the flow of vehicular traffic through the region and provide for linkages of walking and bicycle paths. 8. Investigate alternative modes of public transportation.

Housing *– Ensure that a range of affordable housing exists.*

Goal	Objectives
The Township has limited land remaining for major developments. The development of remaining land should be directed to fitting into the characteristics of the Township and its neighborhoods.	1. Explore affordable housing options to address the needs of the Township's population. 2. Identify existing housing maintenance and codes deficiencies and recommend actions to address these deficiencies. 3. Identify remaining parcels of available land and the character of surrounding neighborhoods. 4. Explore opportunities for regional planning of alternative housing.

Economic Development *-- Retain existing business and attract new business to provide employment opportunities and an enhanced tax base.*

Goal	Objectives
Provide for appropriate employment opportunities and commercial activities in the Township.	1. Identify and designate areas of the Township that are suitable for commercial development. 2. Maintain and improve the economic viability of the U.S. Rt. 202 Business District. 3. Improve the streetscape of the U.S. Rt. 202 Business District.

Community Facilities and Services *-- Identify current and future needs for police, emergency services, administrative, public works, and other services and facilities provided by the Township.*

Goal	Objectives
Provide community facilities and services to meet current and future residential and business requirements in the Township.	1. Investigate and prioritize the following community services and facilities, and make recommendations to address deficiencies: a) Public water and sewer service. b) Police and emergency services. c) Township administration and code enforcement. d) Road maintenance and public works. e) Trash and recycling services. f) Park and recreation facilities and services.

Regional Coordination *-- Identify opportunities for coordination of planning issues with surrounding townships and Chester County.*

Goal	Objectives
Encourage and participate in regional planning activities.	1. Participate in the West Chester Area Council of Governments. 2. Participate in the West Chester Regional Planning Commission. 3. Coordinate planning with neighboring communities to encourage the provision of public transportation. 4. Coordinate planning with neighboring communities to enhance the flow of vehicular traffic through the region and provide for linkages of walking and bicycle paths. 5. Coordinate planning with neighboring communities to ensure compatible land use patterns for adjoining areas. 6. Participate in multi-municipal planning initiatives for compatible development, continuation of historic community patterns, and coordination of infrastructure development. 7. Coordinate with area communities and PennDOT regarding detailed plans for the U.S. Rt. 202 improvement project.
Consistency with County policies	1. Make the Thornbury Township Comprehensive Plan generally consistent with the Chester County Comprehensive Plan.

2. DEMOGRAPHICS AND HOUSING INVENTORY AND ANALYSIS

Using 2000 U.S. Census data, this chapter examines population projections and characteristics as well as housing and employment patterns for the Township and the region. This data provides a basis for many of the Township's land use, community services and transportation policy decisions to be made over the next decade, and will facilitate determination of Township resource allocations with respect to policy objectives. A summary is provided at the end of the chapter.

A. POPULATION PROJECTIONS

Population projections for a community provide an estimate of future populations based on past demographic trends using fertility (birth rates), mortality (death rates) and net migration rates. Unlike fertility and mortality rates, net migration depends more on economic factors and is more difficult to determine since it is affected by planning policies, housing prices and job availability. Thornbury Township's Comprehensive Plan of 1983, using projections provided by the Delaware Valley Regional Planning Commission (DVRPC), projected the Township's 2000 population to be approximately 1,600. A 1993 DVRPC population forecast publication indicated that Thornbury's population would be about 1,280 in 2000, 1,410 in 2010, and 1,580 in 2020. The 2000 Census recorded 2,678 township residents.

In 2002, the Chester County Planning Commission (CCPC) published population projections for Chester County municipalities for 2010 and 2020. These projections, along with the year 2000 and past Census results (1960-2000) are shown in Table 2-1, Population Trends, which includes data for Thornbury Township, Chester County, the West Chester Region, Thornbury Township, Delaware County, Chester County and Pennsylvania.

As is apparent from this table, Thornbury Township's growth rate has exceeded that of most of the surrounding communities, as well as Chester County as a whole.

Table 2-1: Population Trends

							PROJECTED	
		1960	**1970**	**1980**	**1990**	**2000**	***2010****	***2020****
Thornbury	Population	417	803	1,323	1,131	2,678	*3,230*	*3,820*
	% Change		92.4%	64.8%	-14.5%	136.8%	*20.6%*	*18.3%*
W.C. Region**	Population	31,787	48,819	64,517	81,172	94,114	*102,920*	*109,510*
	% Change		53.6%	32.2%	25.8%	15.9%	*9.4%*	*6.4%*
Thornbury, Delaware Co.	Population	2,035	2,652	3,653	4,728	5,787	*7,140*	*7,840*
	% Change		30.3%	37.7%	29.4%	22.4%	*23.4%*	*9.8%*
Chester County	Population	210,608	277,746	316,660	376,396	433,501	*483,500*	*528,000*
	% Change		31.9%	14.0%	18.9%	15.2%	*11.5%*	*9.2%*
Pennsylvania	Population	11,319,000	11,794,600	11,863,895	11,881,643	12,281,054	*12,365,000*	*12,683,000*
	% Change		4.2%	0.6%	0.1%	3.4%	*0.7%*	*2.6%*

** Projections by the Chester County Planning Commission and the Delaware Valley Regional Planning Commission.*
*** Includes East Bradford, East Goshen, West Chester, West Goshen, West Whiteland & Westtown.*

Source: U.S. Bureau of Census, Census Data for 1960, 1970, 1980, 1990 and 2000
Chester County Planning Commission, Planning Summer 2002 Newsletter; U.S. Bureau of Census, Middle Series Projections; Delaware Valley Regional Planning Commission, 2002.

Although the Census recorded a 14.5% decline in the township population from 1980 to 1990, this was primarily related to a dormitory closing at Cheyney University. The non-student resident population, in fact, increased by about 6% over this same period. The 280 acre "Brandy-

wine at Thornbury" development (110 detached, 184 townhouses and 212 apartments) and the Greens at Penn Oaks (70 townhouses) accounts for the nearly one hundred thirty seven percent (137%) growth in Township population during the past decade.

Growth Trends

The Township's growth trends, as shown in Table 2-1, are projected to continue, although at a more moderate pace of approximately 20% per decade. These trends more closely resemble projections for the adjacent Delaware County communities than the West Chester Regional and Chester County communities to the north. If accurate, Thornbury Township could see an increase of 1,142 residents by the year 2020, which represents a forty three percent (43%) increase in the current population. At the current average household size of 2.6 residents per household (*1,142 / 2.6*), this would represent 439 new dwelling units.

Projections

Table 2-2 presents population projections made by the Township Planning Commission for this Plan, and compares them with the Census projections. The projections made for the comprehensive plan are based on a build-out analysis of the township at the recommended zoning densities. This analysis is discussed in more detail in Appendix B and Section C of Chapter 3, Existing Land Use and Zoning, of this plan.

Table 2-2: **Township Housing and Population Projections**

				PROJECTED	
		1990	**2000**	***2010***	***2020***
DVRPC [1]	Population	1,131	2,678	*3,230*	*3,820*
	% Change		*136.8%*	*20.6%*	*18.3%*
COMPREHENSIVE PLAN [2]	**Population**		**2,678**	***3,156***	***3,635***
	% Change		**136.8%**	***17.9%***	***15.2%***
Average Household Size			*2.60*	*2.60*	*2.60*
Occupied Housing Units			*1,023*	*1,207*	*1,391*

[1] Chester County Planning Commission, Planning Summer 2002 Newsletter; U.S. Bureau of Census, Middle Series Projections; Delaware Valley Regional Planning Commission, 2002.

[2] Projections based on buildout analysis at recommended zoning densities and assuming no change in existing average household size.

The projections made for this plan assume a complete build-out of the township by 2020 at the recommended zoning density. The key factors in making this projection is the build-out analysis conclusion that approximately 368 (see Table 3-2) additional dwelling units can be built in the township and the assumption that the average household size of 2.6 residents per housing unit reported in the 2000 Census will not change. If the average household size declines, as has been the trend, then the projected population will similarly decline, but the number of projected households will remain the same.

B. POPULATION CHARACTERISTICS

Tables 2-3 through 2-7 list selected characteristics of Thornbury Township residents reported in the 2000 Census, including age, school enrollment, education, ethnicity and race.

Age

Table 2-3 provides data from the 2000 Census regarding Township residents' ages. The average age of Township residents is relatively young, which is consistent with the current national trend. The largest age groups are those between the ages of 25 and 54, which accounted for 51.9% of the total population. Residents aged fifty-five (55) years and older comprised 16.8% of the population in 2000. Only nineteen percent (19%) of the Township's population was comprised of school-aged children (5 years old through 19 years old).

Table 2-3: Age

	2000	*Twp.*	*County*
Under 5	213	8.0%	*6.8%*
5-9	205	7.7%	*7.5%*
10-14	178	6.6%	*7.6%*
15-19	135	5.0%	*6.8%*
20-24	108	4.0%	*5.4%*
25-34	410	15.3%	*12.6%*
35-44	522	19.5%	*17.7%*
45-54	458	17.1%	*14.9%*
55-59	132	4.9%	*5.2%*
60-64	124	4.6%	*3.7%*
65-74	106	4.0%	*6.3%*
75-84	69	2.6%	*4.1%*
85+	18	0.7%	*1.3%*
Total	2,678		
Median Age (yrs.)		36.8	*36.9*

Source: 2000 U.S. Census.

School Enrollment

Table 2-4 provides data regarding school enrollment in Thornbury. About one-quarter (¼) of Township residents (648) were enrolled in school. Among those enrolled in school, 40% were in elementary school, 19.4% in high school and 23.5% in college or graduate school. These proportions are similar to those for the County as a whole and reflect a population of young families with children, and a considerable number of residents actively pursuing higher education.

Table 2-4: School Enrollment

	2000	*Twp.*	*County*
Nursery school, preschool	93	14.4%	*8.3%*
Kindergarten	17	2.6%	*5.4%*
Elementary School (grades 1-8)	260	40.1%	*44.9%*
High School (grades 9-12)	126	19.4%	*20.4%*
College or Graduate school	152	23.5%	*21.0%*
Total	648		

Source: 2000 U.S. Census.

Educational Attainment

Data about educational attainment in the Township is shown in Table 2-5. The 2000 Census reported educational attainment for those residents twenty-five (25) years of age and older. Township residents are well educated, with over sixty-two percent (62%) having at least a bachelor's degree as compared to forty-two percent (42%) of County residents.

Table 2-5: Educational Attainment

	2000	*Twp.*	*County*
Less than 9th grade	-		*3.4%*
9th to 12th grade, no diploma	74	3.8%	*7.2%*
High school graduate (includes equivalency)	276	14.3%	*26.0%*
Some college, no degree	261	13.5%	*15.5%*
Associate degree	112	5.8%	*5.4%*
Bachelor's degree	696	36.0%	*26.6%*
Graduate or professional degree	513	26.6%	*15.9%*
	1,932		

Source: 2000 U.S. Census.

Race / Ethnicity

Table 2-6 provides data regarding the race/ethnicity of Township residents. Similar to Chester County, the 2000 Census reports that Township residents are ninety-two percent (92%) Caucasian. Other racial groups include African-American, 69 or 2.6% of the Township population, and Asian & Hawaiian/Pacific islands, 123 residents or 4.6%. Twenty-one (21) residents were listed as Hispanic or Latino of any race.

Table 2-6: Race/Ethnicity

	2000	*Twp.*	*County*
White	2,461	91.9%	*89.3%*
African-American	69	2.6%	*6.2%*
Native-American	-	-	*0.1%*
Asian	122	4.6%	*2.0%*
Native Hawaiian / Pacific	1	0.0%	-
Some other race	6	0.2%	*1.3%*
Two or more races	19	0.7%	*1.1%*
	2,678	100.0%	*100.0%*
Hispanic or Latino *(any race)*	21	0.8%	*3.7%*

Source: 2000 U.S. Census.

Place of Birth

Table 2-7 provides data regarding the place of birth of Township residents. While most, fifty-five percent (55%) of Township residents were born in Pennsylvania, this figure was less than that for the County (66%), and much less than the average the entire state (78%). Foreign-born residents account for 6.3% of the Township, which is more than both the 5.5% for the county and 4.1% in the state.

Table 2-7: Place of Birth

	2000	*Twp.*	*County*
Native			
- State of residence	1,504	55.1%	*66.2%*
- Different state	1,035	37.9%	*27.3%*
- Born outside the U.S.	19	0.7%	*1.0%*
Foreign born	173	6.3%	*5.5%*
Total*	2,731		

** Data based on a sample, not an actual count.* reported for

Source: 2000 U.S. Census.

C. EMPLOYMENT & INCOME CHARACTERISTICS

The 2000 Census reported 1,490 Thornbury Township residents were employed, a 164% increase over the 1990 Census figure of 564. An overview of resident employment characteristics is presented in Table 2-8. Most classified their occupation as "managerial and professional related" (54.7%) and "sales and office" (29.3%). The top industries were "education, health & social services" (24.4%) "professional, scientific, management" (18.6%), "finance, insurance, & real estate" (12.4%), and "manufacturing" (11.5%). These employment patterns are typical for all Chester County municipalities.

Income statistics, which are reported for 1999, were significantly higher in the Township than the County. Overall, the median household income was 29% higher and the median family income was 46% higher in the Township than the County.

Table 2-8: Resident Employment & Income Characteristics

Industry	*2000*	*Twp.*	*County*	*Occupation*	*2000*	*Twp.*	*County*
Agriculture, forestry, etc.	0	0.0%	*2.0%*	Managerial, professional	815	54.7%	*45.2%*
Construction	72	4.8%	*5.6%*	Services	112	7.5%	*10.9%*
Manufacturing	169	11.3%	*14.8%*	Sales and office	436	29.3%	*26.3%*
Wholesale trade	41	2.8%	*4.0%*	Farming, forestry…	0	0.0%	*1.0%*
Retail trade	137	9.2%	*11.2%*	Construction, maintenance…	45	3.0%	*6.9%*
Transportation & warehousing	76	5.1%	*4.1%*	Production, transportation…	82	5.5%	*9.7%*
Information	36	2.4%	*3.0%*	**Total**	1,490		
Finance, insurance, & real estate	182	12.2%	*10.0%*				
Professional, scientific, management, etc.	273	18.3%	*13.8%*				
Education, health & social services	357	24.0%	*19.8%*	***Income** (1999)*	*Twp.*		*County*
Arts, recreation, accomodation, food services	44	3.0%	*5.4%*	Per capita	$47,505		*$31,627*
Other	79	5.3%	*4.1%*	Median household	$84,225		*$65,295*
Public Administration	24	1.6%	*2.3%*	Median family	$112,291		*$76,916*
Total	1,490						

Source: U.S. Burearu of the Census, Census 2000, Profile of Selected Economic Characteristics.

D. HOUSING AND HOUSEHOLD CHARACTERISTICS

This section presents the types of households and the cost and characteristics of housing found in the Township.

Households

The Census records both "family households" and "non-family households."

Family Households. A family household includes a householder and one or more people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in census tabulations. Thus, the number of family households is equal to the number of families, but family households may include more members than do families. A household can contain only one family for purposes of census tabulations.

Non-family Households. Not all households contain families since a household may comprise a group of unrelated people or one person living alone. Non-family households consist of a householder living alone or with non-relatives only.

Households. A household can refer to either a family or non-family household, and includes all of the people who occupy a housing unit. People not living in households are classified as living in "group quarters." In most cases, the "householder" is the person, or one of the people, in whose name the home is owned, being bought, or rented. If there is no such person in the household, any adult household member 15 years old and over could be designated as the householder.

Household Characteristics

Household characteristics recorded in the 2000 Census are presented in Table 2-9. There were a total of 1,023 households in the Township in 2000. Seventy-two percent (72%) of these were "family households," twenty-eight percent (28%) were "non-family households," and 231 resi-

dents were recorded as "living alone." These percentages correspond very closely to those for the County as a whole.

Average household size was 2.6 occupants per unit and average family size was 3.10. These proportions and numbers are also very similar to those reported for Chester County as a whole. The average household size figure is useful in estimating the new housing needs associated with the population projections presented above.

Table 2-9: Household Characteristics

Household Type	*2000*	*Twp.*	*County*
Family households	735	71.8%	*71.8%*
Non-family households	288	28.2%	*28.2%*
Living alone	231	22.6%	*20.2%*
Average household size		2.60	*2.65*
Average family size		3.10	*3.15*

Source: 2000 U.S. Census.

Table 2-10 shows that most households -- 69.8% -- owned their housing, while 30.2% rented. The proportion of rental housing is significantly higher than that for the County as a whole, where just 23.7% of the housing units were renter-occupied.

Housing Characteristics

Table 2-10 lists the housing characteristics reported in the 2000 Census for the Township along with comparable values and ratios for the Chester County housing inventory as a whole. Overall, the Census reported a total of 1,095 housing or dwelling units in Thornbury Township. Most of these were owner-occupied (714 units or 70%) and single family detached units (685 units or 61%). Thornbury's housing is also very new --- over sixty percent (60%) have been built since 1990, which is also reflected in the 137% increase in population over the past decade.

Table 2-10: Housing Characteristics

Tenure / Occupancy	*Units*	*Twp.*	*County*
Occupied Units			
Owner-occupied	714	69.8%	*76.3%*
Rental	309	30.2%	*23.7%*
	1,023		
Vacant	72	6.6%	*4.5%*
Total	1,095		

Year Built	*Units**	*Twp.*	*County*
1990 and later	682	60.6%	*19.4%*
1980-1989	143	12.7%	*19.1%*
1970-1979	86	7.6%	*17.5%*
1960-1969	47	4.2%	*12.8%*
1940-1959	102	9.1%	*14.8%*
1939 and earlier	65	5.8%	*16.4%*
	1,125		

Unit Type	*Units**	*Twp.*	*County*
Single family detached	685	60.9%	*60.7%*
Row / townhouses / twins	158	14.0%	*15.6%*
2 to 9 unit apartment	26	2.3%	*9.2%*
10+ unit apartment	236	21.0%	*9.5%*
Mobile homes	20	1.8%	*4.9%*
Total	1,125		

Values / Rents	*Twp.*	*County*
Owner-occupied, median	$322,500	*$182,500*
Median rent	$1,165	*$754*

** Unit types and age based on sample, so total units due not match actual figures.*

Source: 2000 U.S. Census.

Thornbury housing is also relatively expensive, as also shown in Table 2-10. The 2000 Census reported the median home value to be $322,500, as compared to $182,500 for Chester County. Median rents are also high, $1,165 as compared to $754 for all Chester County municipalities.

Housing Affordability

The Chester County 2020 Trust published a study on housing affordability in Chester County in June 1999. Using census data for median household income and the 1996 County reassessment data on housing values the study estimates the affordability of housing among all 76 municipalities in Chester County. As a threshold for "affordable housing," the study used the U.S. Department of Housing and Urban Development's definition for "moderate family income" as representing eighty percent (80%) of the regional median family income, which was $49,300 for the Philadelphia Metropolitan Statistical Area (MSA)[1] in 1999 when the study was published.

For Thornbury Township, an "affordable" house for purchase was defined in the study as less than $114,100 and a monthly rent as less than $986. For Thornbury Township, the study concluded that 78.3% of the Township's rental units and 20.7% of the for purchased or owner-occupied units were "affordable," and 23.3% of all housing units were considered affordable.

Table 2-11 presents an update of this analysis using the 2003 Philadelphia MSA moderate income level for a family of four, $54,560, along with moderate income levels based on the 2000 Census for Thornbury and Chester County, which are $89,833 and $61,533 respectively.

This updated analysis estimates that, based on the Philadelphia MSA standard, affordable housing values are $193,809 for purchase housing and $1,364 for monthly rent. Using the 2000 Census median family income levels, these values are $218,577 and $1,538 based on Chester County data, and $319,105 and $2,246 based on Thornbury Township data.

The results of this analysis indicate that, based on the Philadelphia MSA standard, only about 6% of the owner-occupied units in Thornbury Township are affordable, while 90% of the apartment rental units are affordable. When using the County and Township income data, these levels for the owner-occupied units are significantly higher: 11% based on the County and 44% based on the Township income levels.

The Township has seen a considerable increase in apartment construction, which, as this analysis demonstrates, has resulted in a significant increase in affordable rental units in the Township.

Fair Share Analysis

In Pennsylvania "fair share" generally refers to a municipality's obligation to accommodate local and regional housing needs. Pennsylvania courts have developed the following three-part test for determining whether or not a municipality has accommodated these housing needs:

1) Is the community in a logical area for development and population growth?

[1] *An MSA is generally defined as one or more counties containing a core city of at least 50,000 inhabitants. The Office of Management and Budget (OMB) defines metropolitan statistical areas. Currently defined metropolitan statistical areas are based on application of the 2000 standards (which appeared in the Federal Register on December 27, 2000) to Census 2000 data and were announced by OMB effective June 6, 2003.*

2) Is the community in the path of development/population growth?

3) Is the percentage of land available under the zoning ordinance sufficient and appropriate considering development pressure and projected population growth?

Table 2-11: Thornbury Affordable Housing Analysis

	Moderate Income Threshold [1]		
Moderate Income Defined	**Philadelphia MSA (2003)**	**Chester County (1999)**	**Thornbury Township (1999)**
Moderate Income (80% of Median)	$54,560	$61,533	$89,833
- 30% of monthly income (housing costs)	$1,364	$1,538	$2,246
Moderate Income Housing values using "30/38" HUD	**$193,809**	**$218,577**	**$319,105**
- principal (assuming 10% down payment)	$174,428	$196,720	$287,195
- monthly mortgage payment	$1,046	$1,179	$1,722
- monthly taxes @ 16.703 mills	$270	$304	$444
- monthly Insurance, estimate @ 0.3% of value	$48	$55	$80
- total monthly housing costs - 30% of monthly income	*$1,364*	*$1,538*	*$2,246*
Affordability Analysis of Thornbury Township Housing, Owner-Occupied Units			
Single Family Units (not apartments) [3]	873	873	873
Affordable Threshold	$193,809	$218,577	$319,105
Affordable Single Family	**54**	**100**	**387**
Percent Affordable	**6%**	**11%**	**44%**
Affordability Analysis of Thornbury Township Housing, Renter-Occupied Units			
Apartment Units [4]	212	212	212
Affordable Rent Threshold	$1,364	$1,538	$2,246
Affordable Apartment Units	**190**	**190**	**212**
Percent Affordable	**90%**	**90%**	**100%**
	16.703		

Notes:

[1] Moderate income calculations based on the Median Family Income for a family of 4 in the Philadelphia Metropolitan Statistical Area as set by the U.S. Department of Housing and Urban Development for FY 2003; and the Median Family Income reported by the 2000 Census in Thornbury Township and Chester County.

[2] The 30/38 HUD guidelines set monthly housing costs (principal, interest, taxes and insurance) at 30% of household income and total long term debt payments at 38% of household income. Commercial lenders typically use a 28/36 guideline.

[3] Housing unit data is from the Chester County Tax Assessment records.

[4] The Springhouse apartments were surveyed (November, 2003) for this analysis. These units constitute nearly 70% of the 309 rented housing units reported in the 2000 Census and virtually all of the apartment units in the Township. The Springhouse 1 bedroom units rent for $1,085, the 2 bedroom units for $1,325, and the 3 bedroom units for $1,855. The average rent is $1,273.

In addition, Pennsylvania's fair share analysis focuses on whether or not a municipality is providing its fair share of housing types, and not on whether it is providing affordable housing.]

Courts have rejected claims that a municipality is failing to meet its fair share requirements because lot size restrictions would not permit the construction of homes that could be afforded by those with low to moderate incomes.

Is the Thornbury Township in a logical area for development and population growth?

The answer to this question would have to be a qualified yes. While the Township lies along major highway routes and is within a rapidly developing county and transportation corridor, it's internal road system has been built on a system of rural roadways that can not easily be upgraded to accommodate high density development, and public water and sewer services are generally limited to the Route 202 corridor.

Is the community in the path of development/population growth?

The answer to this question is yes, and is best illustrated by the 137% increase in the Township's population over the past decade, which was by far the highest among West Chester regional communities.

Is the percentage of land available under the zoning ordinance sufficient and appropriate considering development pressure, population growth and projected population growth?

Most of the recent growth in the Township has consisted of townhouse and apartment rental units, and multi-family housing now constitutes nearly 40% of all housing in the Township, which is the same proportion found in Chester County and exceeds that of the adjacent communities. This Comprehensive Plan also provides for a population growth rate of 17.9% over the next decade, which exceeds that for both Chester County and the West Chester Region.

E. SUMMARY AND PLANNING IMPLICATIONS

	Observation	Implications
Population Projections	The projected population increase of 957 new residents by 2020 is based on a build-out of the township with 368 new dwelling units. (*Actual development potential may be less since the build-out analysis, presented in Chapter 3, is an estimate based on available mapped natural environmental and parcel data, and not on an actual survey of each parcel.*)	Adopt these projections as the basis for making policy decisions in the administration of the township.
Population Characteristics	During the last decade, the Township's population has increased by approximately 137%. The majority of the new people are well-educated professionals who sought the rural character and slower pace of life provided by the Township.	Maintain the rural character of Thornbury Township.
		Provide limited recreation services and facilities, such as parks and trail systems, while preserving the rural essence of the Township.
		Encourage the provision of open space and trails as part of any new development.
Housing and Household Characteristics	With over 60% of the township's housing stock constructed since 1990, the township's neighborhoods are still evolving and the need for public and recreation services will likely increase as these new residents become more involved in their community.	Provide for new recreational services and facilities on lands owned by the Township.
	Rental units now constitute over 30% of the township's housing stock, while rental units account for about 23% of the total housing units in Chester County and 29% in the West Chester Region (and only 20% among the West Chester Region townships). With the construction of these units, Thornbury Township has more than met its need for rental housing.	Maintain existing rental housing stock in the Township.

	The 2000 Census recorded 65 existing housing units in the township constructed before 1940.	Prepare a complete survey and evaluation of older housing as potentially significant historic resources in the township.
	Although the County Vision Partnership Program Final Consistency Review Report found that a lack of specific provisions for special needs in the Zoning Ordinance is somewhat inconsistent with Landscapes' Special Needs Housing Objective, a significant amount of existing institutional housing is found in the Township, and senior housing in nearby communities.	The existing institutional housing in the Township should continue to be supported in order that the Township continue to meet this critical housing need.
Housing Affordability	Since the publication of the Chester County 2020 study on housing affordability, the percentage of affordable owner-occupied housing in the Township has appeared to decline, while the percentage of affordable rental housing has increased.	Encourage the development of affordable owner-occupied housing.

3. EXISTING LAND USE AND ZONING INVENTORY AND ANALYSIS

This chapter provides an inventory and analysis of current land uses and zoning districts that serve as a basis for accommodating and planning future development in the Township. A summary is provided at the end of the chapter.

A. EXISTING LAND USE

Table 3-1 provides a summary of existing land uses and dwelling units in the Township, and Map 3A, Existing Land Use, shows distribution of land uses in the township. Data sources for the land use inventory include the 2002 Chester County Land Records GIS parcel maps, tax assessment data, and a visual survey of the Township.

Table 3-1: Existing Land Use

Land Use Category	*Parcels*	*Acres*	*Percent*	*Dwelling Units [1]*	*Units per Acre*
Residential Uses					
Single Family Detached	620	1,115.3	*45.13%*	619	0.56
Townhouses/Condos/Twins	254	24.1	*0.98%*	254	10.54
Apartments	1	16.0	*0.65%*	212	13.25
sub-total	**875**	**1,155.4**	***46.75%***	**1,085**	**0.94**
Agricultural Uses					
Agricultural Lands	13	360.1	*14.57%*	12	0.03
	13	**360.1**	***14.57%***	**12**	**0.03**
Non-Residential Uses					
Cemetery	1	1.2	*0.05%*	-	-
Commercial Retail	6	36.2	*1.46%*	-	-
Office	1	0.5	*0.02%*	-	-
School	8	160.2	*6.48%*	-	-
sub-total	**16**	**198.1**	***8.02%***	-	-
Open Space, Recreation, Vacant					
Public Open Space & Recreation	6	106.1	*4.29%*	-	-
Private Open Space & Recreation	24	241.5	*9.77%*	-	-
Vacant Land	42	254.8	*10.31%*		
sub-total	**72**	**602.4**	***24.37%***		
Rights-of-Way					
Railroad	3	22.8	*0.92%*	-	-
Roads	--	132.7	*5.37%*	-	-
sub-total	**3**	**155.5**	***6.29%***		
Total	**979**	**2,471.5**	***100.00%***	**1,097**	-

[1] Dwelling unit count from 2002 Chester County Land records. The 2000 Census recorded only 1 less unit.

Sources: Chester County Land Records, GIS Parcel Maps. (2002)
Chester County Tax Assessment Office, Property Characteristics File (2002)
Ray Ott & Associates, aerial photography/field survey interpretation. (2002)

Township residential land use patterns are characteristic of suburban growth, with higher density residential and commercial uses along the main transportation corridors (in this case U.S. Rt. 202) that gives way to lower density patterns in the western and eastern areas of the Township.

Overall, 46.75% (1,155 acres) of the township is classified residential, and 24.37% (602 acres) of the township is either vacant lands open space/or recreational use. Fourteen percent (360 acres) is considered agricultural use, just 8% (198 acres) is classified as non-residential use, and 6% (155 acres) consists of roads and the SEPTA railroad rights-of-way.

Residential Uses

Most of the residential land consists of 620 lots (1,115 acres) with single family detached houses with an average lot size of nearly two acres. Although these lots account for 97% of the residential land in the Township, they only account for a little over half (57%) of the total dwelling units. The remaining 40 acres, just 3.5% of the residential land, contain a total of 466 dwelling units[2] that accounts for 43% of all dwelling units in the Township.

Agricultural Uses

The Chester County Tax Assessment Office classifies 13 parcels (a total of 360 acres) as agricultural. These parcels range from 71 acres (one of two Spackman farm parcels) to as little as 7.2 acres with an average size of 28 acres. They function mostly as leased crop land or horse pastures. With the exception of the two Spackman farm parcels (48 and 71 acres) which have recently been placed under conservation easements, most of this land could be developed for residential use. Sixteen (16) parcels in the Township have been included in the Township's "Agricultural Security District," which is discussed in Chapter 5.

Non-Residential Uses

Non-residential uses include eight school parcels, six retail commercial properties, one office, and one cemetery. These uses total 198 acres, or about 8% of the total township land area. The largest component of these uses is the five parcels that make up the 140 acre portion of Cheyney University campus in Thornbury Township, Chester County. The six retail commercial parcels include the following uses:

- two gas stations
- the Commons at Thornbury shopping center (southeast corner of U.S. Rt. 202 and PA Rt. 926, part of the new Dilworthtown Crossing shopping center)
- the health and fitness center on Penn Oaks Drive
- the Goose Creek Grill/ Westtown Station property (adjacent to the township's Goose Creek Park)
- the Cheyney Burial Ground (along Cheyney Road just south of PA Rt. 926).

Open Space, Recreation, Vacant

Open space, recreation and vacant land comprises 602 acres among 72 parcels, or 24% of the township land area. More than half of this land, 347 acres, includes parcels owned as private or public parkland or dedicated open space, which are not available for future development. The 255 acres of land classified as vacant, however, is currently available for future development.

[2] *These units include 184 townhouses in the Brandywine at Thornbury community, 70 townhouses in the Greens at Penn Oaks community, and 212 apartment units at Spring House in the Brandywine at Thornbury development.*

Rights-of-Way

A little more than 155 acres, or 6% of the township land, consists of areas within road and railroad rights-of-way. The SEPTA railroad right-of-way accounts for about 23 acres of this land.

B. TOWNSHIP LAND USE PLANNING & ZONING

1983 Comprehensive Plan

The existing Thornbury Township Comprehensive Plan was originally incorporated into the township code in 1983. It was codified in 1997 as Chapter 6 of the Township Code and provides documentation of conditions in the township during the early 1980s and demographic data from the 1980 Census.

The "Future Development" section of this plan (§6-11) formed the basis of the then current Zoning Map and included four general recommendations:

1) A medium-density Planned Residential Development (PRD) district of approximately 150 acres in the vicinity of Cheyney University to be converted to "a type of college town."
2) That approximately 400 acres in the township which lies west of U.S. Rt. 202 be designated as a low-density PRD District to accommodate townhouse and detached home development with office complexes adjacent to U.S. Rt. 202.
3) The development of the Westtown Station area as a recreation and community services area with a renovated Westtown Station building converted to office use "in line with the newly constructed post office building."
4) That the areas of the township east of U.S. Rt. 202 and west of the Westtown Station be preserved as a large-lot residential district with the center of the township (along Waln Run) being maintained "as a relatively undeveloped and open space area due to the existing floodplain restrictions.

Zoning Ordinance

Prior to World War II, Thornbury Township was almost entirely rural, with most homes on lots greater than two acres. The Township's first Zoning Ordinance was adopted in 1950. With the exception of the 106-lot Thornbury Estates subdivision that began development in 1953, the township largely escaped the post World War II construction boom and remained relatively rural until the 1970s. To address suburban development pressure, the zoning ordinance was amended in 1965 and again in the 1970s to provide for apartments, commercial areas and a Planned Residential Development District. The current zoning is shown on Map 3B and described as follows:

Agricultural/Residential Large Lot – (A-L, 80,000 square feet minimum lot size)

This district permits single family detached houses on lots not smaller than 80,000 square feet. All existing undeveloped parcels in the Township under ten acres are subject to the requirements of this district.

Agricultural/Residential Small Lot – (A-S, 40,000 square feet minimum lot size)

This district includes the existing developed areas of Thornbury Estates, College Hill Drive in the southeast corner of the Township, and 5 lots along South Westtown Road, just south of PA Rt. 926. With the exception of a few vacant lots in Thornbury Estates, this zoning district is fully developed.

Agricultural/Residential - Cluster Option at 1.2 units/acre (minimum 25 acres)

The Cluster option is available for parcels in the Agricultural/Residential District that are over 25 acres. Sixty percent (60%) of the total tract area must be designated as common open space.

Planned Residential Development (PRD-minimum 100 acres)

With the exception of the one lot at the southwest corner of U.S. Rt. 202 and PA Rt. 926 that is in the Business Zoning District, the PRD District includes all areas west of U.S. Rt. 202. Since there are no remaining available contiguous areas of 100 acres in this area, the PRD district is fully developed, and the remaining parcels in this area could be developed according to the provisions of the Agricultural/Residential Large Lot district and Cluster Option.

Business (B)

The Business zoning districts include the Commons at Thornbury shopping center on the southeast corner of Rts. 202 and 926, the lot at the southwest corner of U.S. Rt. 202 and PA Rt. 926, and part of the new Dilworthtown Crossing shopping center.

Historic District (H)

The Historic District is located in the southwestern corner of the Township and was enacted to preserve the historic Brandywine Battlefield and to promote interest in this Township cultural resource.

C. RESIDENTIAL BUILD OUT ANALYSIS

Using the above zoning parameters, a "build out" analysis was prepared by the Planning Commission to estimate the total capacity for new residential development under the Township's current zoning ordinance. It was prepared using current tax assessment files (2002) to calculate the number of tax parcel and dwelling units in each residential zoning district. The acreage of each parcel was then adjusted to exclude floodplains and hydric soils and to estimate a net developable lot area. All deed restricted and otherwise development-restricted land was excluded from these calculations.

The existing zoning density or minimum lot size criteria was then used to calculate the theoretical development potential in each zoning district. The zoned density parameters were increased by a factor of 15% in order to account for the need to accommodate roads and other area losses due to site geometry.

See Appendix B for a detailed description of the build out analysis.

Results

The results of this analysis are shown on Map 3C, Build Out Analysis, and summarized in Table 3-2 below. Overall, the build out analysis indicates that there is a potential for approximately 368 new dwelling units in Thornbury Township under current zoning criteria. By far most of this

development -- 71% or 263 units -- could occur under the provisions of the Cluster Development Option for parcels over 25 acres[3] in the Agricultural/Residential Zoning District. It is estimated that 98 units could be developed as 80,000 square-foot "large lots" in the Agricultural/Residential Zoning District and seven units could be developed on existing underdeveloped or vacant lots in the 40,000 square-foot "small lot" Agricultural/Residential Zoning District.

Table 3-2: Residential Build Out Analysis

Zoning District	Minimum Residential Lot Size	Parcels	Acres	Net Acres [1]	Existing Dwelling Units Units	Existing Dwelling Units Approx. Acres [3]	Potential [2] Dwelling Units Units	Potential [2] Dwelling Units Approx. Acres [3]
Agricultural/Residential (40,000 s.f.)	40,000	129	166.7	157.4	125	149	7	8
Agricultural/Residential (80,000 s.f.)	80,000	479	1,174.0	960.4	432	807	82	153
Agricultural/Residential (Cluster Option, 25+ acres)	36,300	9	448.2	331.4	4	5	263	326
A/PRD/MH [4]	80,000	348	402.3	332.9	538	294	16	39
Business		6	41.9	39.0	-		-	
Historic	50,000	1	12.0	11.6	-		-	
Township Owned		4	89.4	37.5	-		-	
Township Owned & Historic		1	4.2	3.5	-		-	
Road rights-of-way [5]			*132.7*					
Grand Total		**977**	**2,471.5**	**1,873.7**	**1,099**	**1,255**	**368**	**527**

[1] Gross parcel acres less flood plains and hydric soils.
[2] Based on net acres and zoned density, less any existing dwelling units.
[3] Existing and potential dwelling unit acres based on average net acres per dwelling unit in each zoning district.
[4] Since there are no 100 acre parcels to qualify for the PRD option, the 80,000 s.f. lot size was assumed.
[5] Road rights-of-way are included to account for land not in parcels.

Sources: Chester County Land Records, GIS Parcel Maps. (2002)
Chester County Tax Assessment Office, Property Characteristics File (2002)
Ray Ott & Associates, aerial photography/field survey interpretation. (2002)

The above analysis concludes that in Thornbury Township, at a maximum and under the current zoning regulations, the number of dwelling units could rise by roughly 33%. Since approximately 71% of this developable land is within the Agricultural/Residential (Cluster Option), any zoning modifications to this district should include an analysis of the impact on this build-out analysis.

D. ADJACENT MUNICIPALITIES ZONING

Map 3D, Regional Zoning Analysis, represents the existing zoning districts in Thornbury and the adjacent townships in Chester County -- Birmingham and Westtown -- and Delaware County -- also named Thornbury.

Westtown Township, Chester County

Westtown Township, Chester County, shares Thornbury Township's entire northern border, separated by Street Road (PA Rt. 926), a minor arterial roadway. This border area is mainly comprised of residentially zoned land, with commercial zoning in both townships at the intersection of U.S. Rt. 202 and PA Rt. 926. The zoning in this area is generally compatible between the two townships. Lands to the west of U.S. Rt. 202 are predominately agricultural lands; compatible with the dedicated open space of the Brandywine at Thornbury community.

[3] *At the time of this report the existing 10 acre minimum qualifying area was proposed to be increased to 25 acres.*

Thornbury Township, Delaware County

Thornbury Township, Delaware County, borders Thornbury Township to the south and east, representing the Chester and Delaware county line. The residential zoning districts are compatible along this boundary, ranging from low to medium and high density residential uses. Along Dilworthtown Road, the Delaware County side of the border is zoned industrial, while the Chester County side is zoned commercial. These are also quite compatible adjacent zoning districts.

The only area of inconsistency is at Cheyney University, where Thornbury, Delaware County, includes the university land in an institutional district and Thornbury, Chester County, has zoned the land low density residential and institutional as a use permitted by Special Exception.

Birmingham Township, Chester County

Birmingham Township forms the entire western border of Thornbury Township. All lands fronting U.S. Rt. 202 in this area are in Birmingham Township and are zoned commercial. Only two parcels in the southwest corner of Thornbury Township that comprise the recently completed shopping center are zoned commercial. Birmingham Township's very low density (< 3.5 acre) in areas further west and low density along Thornbury Township's westernmost border are generally compatible with zoning in Thornbury Township.

E. SUMMARY AND PLANNING IMPLICATIONS

	Observation	Implications
Existing Land Use	Thornbury Township's land use patterns have been well established over many years.	Existing land use patterns should be maintained.
	Vacant and agricultural lands constitute 615 acres, or 25% of the township land area. The future development of these lands could dramatically impact the township's character.	Direct future development in a manner that preserves their open space, environmental and scenic qualities.
	Remaining agricultural lands constitute 360 acres among 13 parcels, or 15% of the township land area. Five of these parcels, or 110 acres, are not in the Township Agricultural Security District. The Agricultural Security District protects these farms from local adoption of "nuisance ordinances" which could adversely affect farming activity, and also makes them eligible for the state and county agricultural easement acquisition program.	Expansion of the Township Agricultural Security District to include other agricultural properties should be considered.
Township Land Use Planning & Zoning	Thornbury Township's Zoning and Subdivision and Land Development Ordinances are somewhat inconsistent with the Chester County's Landscapes Plan Parks and Recreation Objective	Update the Township's Zoning Ordinance to require developers to dedicate open space to the Township or pay a fee-in-lieu of dedication.
Residential Build Out Analysis	The build out analysis indicates that there is a potential for 368 new dwelling units under current zoning criteria, most of which is permitted under the provisions of the Cluster Development Option for parcels over 25 acres in the Agricultural/Residential Zoning District.	This build-out potential should be modified to reflect the recommendations of this plan and the population projections should be adjusted accordingly.

Adjacent Township Zoning	Cheyney University is currently a use permitted by Special Exception in the Agricultural and Residential zoning district, while it is in an "institutional" zoning district in Thornbury Township, Delaware County.	Thornbury should examine the Thornbury Township, Delaware County zoning and consider creating an institutional zoning district for the university area.

4. TRANSPORTATION AND CIRCULATION INVENTORY AND ANALYSIS

This chapter addresses the elements of existing transportation, road circulation, and bike routes and trail systems in the Township. A summary is provided at the end of the chapter.

A. COMMUTING TO WORK

Table 4-1, Commuting to Work, illustrates how Township residents travel to work. Typical in Chester County, but even more so in Thornbury, most people drive to work alone. No one in the Township walks to work, and only 46 residents used public transportation.

Table 4-1: Commuting to Work

	2000	*Twp.*	*County*
Workers 16 years and older	**1,477**	**100.0%**	**100.0%**
Drove alone (car, truck or van)	1,255	85.0%	80.7%
Carpooled (car, truck or van)	66	4.5%	8.6%
Public Transportation*	46	3.1%	2.6%
Walked	-	-	2.5
Other means	-	-	0.6
Worked At Home	110	7.4%	4.9%

Avg. travel time to work (minutes)		**32.3**	**27.5**

** Used public transit as part of commute.*

Source: 2000 U.S. Census.

B. PUBLIC TRANSPORTATION

As discussed above, only forty-six (46) of 1,477 working residents of the Township used public transportation to commute to work. There are limited and inconvenient public transportation choices available to residents of the Township as well as those who work in but live outside the Township or those who are just passing through.

Rail Service

Commuter trains once served the Township via the currently idle SEPTA West Chester R-3 line. While SEPTA still maintains the rail and right-of-way, commuter service was discontinued in 1985. Residents desiring to use public rail service must use roadways to access transit stations located in neighboring areas such as Exton and Paoli in Chester County or Elwyn and Media in Delaware County. These rail systems provide service between towns in Chester and Delaware Counties and into the City of Philadelphia.

Bus Service

During the 1990's SEPTA operated a bus route to Wilmington, Delaware. That service is no longer active however. Currently, SEPTA operates three (3) bus routes which serve the Township. Two of the three bus routes provide service to Cheyney University and to neighboring local businesses/work places, medical facilities, and shopping areas:

- Bus Rt. 119 between Feltonville, Delaware County and West Chester, Chester County stops at Cheyney University. Other major stops include the Crozier Medical Center, Elwyn, the Granite Run Mall, Franklin Mint, and Markham in Delaware County.
- Bus Rt. 120 provides service between Philadelphia's 69th Street Terminal and Cheyney University with a stop in Newtown Square, Delaware County.

The third bus route (Rt. 314) provides service between Larkins Corner Shopping Center and Brandywine Airport. There is a stop convenient to Township residents just north of the intersection of U.S. Rt. 202 and PA Rt. 926. Other stops include the Larkins Corner Shopping Center, Concordville Plaza, and Applied Card Systems in Delaware County as well as New and Market Streets in West Chester, West Goshen Shopping Center, Airport Road, Paoli Pike and Goshen Corporate Park in Chester County.

Trolley/Subway Service

There is no trolley or subway service to or between locations in the Township. There is, however, service between Philadelphia and Media and Sharon Hill in Delaware County which enables Township residents to access this service after a relatively short trip to the transit stations.

C. COUNTY SUBSIDIZED TRANSPORTATION

Chester County provides bus transportation (Chester County Paratransit) for people with special needs. Residents of the Township may call the County to arrange for transportation which picks up and drops off at the resident's home and provides transportation to facilities to which residents need to go.

D. CIRCULATION SYSTEM

The existing road network plays a significant role in providing transportation services to Township residents. In this section, the system is inventoried as follows:

- *Roadway Functional Classification*
- *Roadway Conditions (including traffic volumes, number of accidents and roadway needs)*
- *Township Roadway Maintenance*

Roadway Functional Classification

The Township has a total of 28.55 miles of roads within its boundaries. These roads are owned and maintained either by the Township, the State or by private groups or citizens. The State owns 7.09 miles, which consists primarily of the highway network of the community. The Township owns 16.92 miles of the network, which is comprised of a combination of rural, scenic, and farm roads and streets within residential neighborhoods. Privately owned roads account for 4.54 miles of roads. There are seven (7) traffic signals within, or on the boundaries of the Township.

For the Plan, roadways have been classified in accordance with the "Highway Functional Classification Variables and Criteria (Draft)" published by the CCPC. A road's function is based on volume of traffic, travel speed, accessibility, its relationship to places of interest, and relationship to other roadways. Some carry higher speed through traffic, some carry local traffic between

neighborhoods, and some provide access from individual residential driveways. Road function helps to define the character of the road and ultimately, the design and access treatment.

The different classifications, which are shown on Map 4A, Road Classifications and Traffic Counts, are described below. These classifications and associated capacity standards are also discussed below under Major Roadway Improvement Needs, and summarized in Table 4-2, Major Roadway Needs Analysis.

Expressways

Roads in Township: None

Expressways service the highest volumes for the highest average trip lengths. Expressways are designed to provide access only at interchanges while providing linkages on an interstate or inter-regional basis. Expressways allow the highest level of mobility for trucks and are intended to allow the highest levels of speed for all vehicles.

The Township does not contain any expressways. U.S. Rt. 202 changes to an expressway north of the Township from the Borough of West Chester to Valley Forge.

Major Arterials

Roads in Township: Wilmington Pike (U.S. Rt. 202)

Major arterials have as their major function the movement of large volumes of traffic at relatively high rates of speed, often at fifty-five (55) miles per hour (mph). They provide higher types of service and facilitate traffic over longer distances on an inter-county or interstate basis. Access points are generally limited and controlled.

Wilmington Pike (U.S. Rt. 202) is a four-lane highway, and is considered a major arterial, although it is different from typical major arterial roadways. It is a divided highway, but it retains some limitations on direct access and higher speeds (its speed limit is 45 mph). This pattern has been established over a long period of time and has seen significant changes in land uses abutting the highway. Wilmington Pike (U.S. Rt. 202) is an important interstate and inter-county highway through Chester County and southeastern Pennsylvania. It provides a connection between Wilmington, Delaware and points south, and between central New Jersey and points north.

Minor Arterials

Roads in Township: Street Road (PA Rt. 926)

Minor arterials interconnect with and augment the major arterial system. These roads provide services for trips of moderate length and have controlled access points. Minor arterials provide greater access to adjacent land than major arterials.

Based on its function as a regional road and its level of traffic, Street Road (PA Rt. 926) is evaluated as a minor arterial road. It is an important east-west cross-county connection in Chester County.

Major Collectors

Roads in Township: None

Major collectors connect municipalities and population centers. These roads are the major contributors to arterial traffic and carry fairly heavy traffic volumes at moderate rates of speed. Access points are somewhat controlled on collector roads. It is not uncommon for major collector roads to span the entire length of a community.

Currently no roads in the Township fall into this category.

Minor Collectors

Roads in Township: Westtown-Thornton Road (S.R. 2005),
South Westtown Road (S.R. 2007),
Dilworthtown Road (S.R. 2029/4015)
South Concord Road
Tanguy Road
Cheyney Road

Minor collectors facilitate relatively low volumes of traffic at lower speeds. They gather traffic from local roads and direct it to the arterials and major collector road networks. Minor collectors often provide traffic circulation between and within residential neighborhoods.

Local Roads

Roads in Township: Remainder of public roads in the Township.

Local roads provide the greatest access to adjacent land. They provide for short distance, low speed travel, and make up the majority of Township owned roads. The number of access points are greatest on local roads.

Local roads handle local traffic and are primarily used by individuals in the community. Table 4-3, Road Inventory, identifies the functional classification assigned to each road segment in the Township.

Private Roads

Roads in Township: Roads owned and maintained by Homeowners Associations.

Private roads provide access to adjacent land, typically only for residential uses. They also provide for short distance and low speed travel.

E. ROADWAY CONDITIONS

With the exception of Rts. U.S. 202, PA 926 and South Concord Road, the roadway network is sufficient for the current traffic and population of the area. Areas of concern are traffic volume, limited sight distance, and awkward road alignment.

Average Daily Traffic

Average Daily Traffic (ADT) is the total 24-hour traffic volume, in both directions, on a road segment for a typical weekday. Traffic volumes fluctuate throughout the year, with heavier volumes in the summer and lighter volumes in the winter. Daily traffic counts, dating back to 1997, were obtained from the files of DVRPC and WEGO.

Map 4A, Road Classifications and Traffic Counts, shows both the road network functional classification and the ADT volumes that were compiled for this study. As expected, the traffic counts reveal that Wilmington Pike (U.S. Rt. 202) carries the highest traffic volumes within the Township, ranging from 43,000 to 47,000 vehicles per day. Street Road (PA Rt. 926) also carries a significant volume of traffic totaling 9,500 to 12,000 vehicles per day, and South Concord Road carries 6,000 to 7,000 vehicles per day. Other road segments that carry in excess of 1,000 vehicles per day include Dilworthtown Road, Cheyney Road, South New Road, Westtown-Thornton Road, and Truth Road.

Accident Reports

A summary of accident data from the Westtown East Goshen Township Police Department (WEGO) was used to identify areas of highest accident rates within the Township. Map 4B, Traffic Accident Data, shows the location of highest accident rates that occurred during the three-year period from 2000 to 2002. The majority of the reported accidents occurred along the corridors of Wilmington Pike (U.S. Rt. 202) and Street Road (PA Rt. 926). The single location with the greatest frequency of reported accidents was the intersection of Wilmington Pike (U.S. Rt. 202) and Street Road (PA Rt. 926). Accidents occurring along these routes are expected because of the traffic volumes that use them.

Major Roadway Improvement Needs

Table 4-2, Major Roadway Needs Analysis, presents a summary of the current use and planning status for major roadways in the Township. The table also lists Bike Route and Scenic Road designations/recommendations discussed in other sections of this report, along with recommendations of this report regarding the future management of these roadways.

Township Roadway Maintenance

Table 4-3, Road Inventory, presents a complete inventory of all roadways in the Township, listing their length in feet, the party responsible for maintenance and neighborhood location. This list was derived from a list used by the Township to monitor local roadway maintenance and includes additional statistics on cartway width and square yards of pavement that are used for Township maintenance purposes.

Table 4-2: Major Roadway Needs Analysis

	Classifications [1]			Daily Traffic Volume				
Road Name	***Functional***	***Bike Route***	***Scenic Road***	***Volume Standard [2]***	***Observed (year) [3]***	***Existing Status***	***Accidents - 2000-2002***	***Recommendation***
Wilmington Pike (US Rt. 202)	Major Arterial	no	no	10,000 to 60,000	46,825 (1999)	within capacity standard but approaching maximum	99	Urge PennDOT to accelerate plans for Route 202 improvements
Street Road (PA Rt. 926)	Minor Arterial	Yes, both Twp. Official Map and County recommendation	Yes, except btw. 202 & S. Concord	8,000 to 20,000	11,980 (1999)	within capacity standard	164	Do not use as Bike Route without widening for bike lanes
S. Concord Road	Minor Collector	Yes, Twp. Official Map	Yes, fr. Westbourne S to twp. Line	1,000 to 5,000	6,897 (2002)	exceeds capacity standard	16	- Pursue traffic calming measures - Maintain existing character as Scenic Road
S. Westtown Road	Minor Collector	Yes, both Twp. Official Map and County recommendation	Yes	1,000 to 5,000	n/a	n/a	n/a	- Maintain as bike route and scenic road.
Westtown Thornton Road [4]	Minor Collector	Yes, Twp. Official Map	Yes	1,000 to 5,000	1,373 (1998)	within capacity standard	n/a	- Maintain as bike route and scenic road.
Cheyney Road	Minor Collector	no	no	1,000 to 5,000	4,410 (2000)	near capacity standard	17	
Dilworthtown Road	Minor Collector	Yes, Twp. Official Map	no	1,000 to 5,000	3,569 (1997)	near capacity standard	n/a	- Maintain as bike route
S. New Street	Local Road	no	no	1,000 to 5,000	2,036 (2000)	near capacity standard	13	

[1] Functional classification is recommended (Map 4A), bike routes are from County and/or Township Official Map, Scenic Roads are recommended.
[2] "Highway Functional Classification Variables and Criteria (Draft)," CCPC, January 2003.
[3] Average daily volumes from DVRPC (1997 to 2002) and WEGO, 2003. Figures shown are for highest recorded volume alongt he route through the township, regardless of year.
[4] Closed since Hurricane Floyd in 1999.

F. BIKE ROUTES AND TRAILS

Map 4C, Bike Routes and Trails, shows designated bike routes along existing roadways and proposed walking trails in the Township. They are important both as alternative means of transportation within the Township and as a recreation resource. The bike routes were compiled from the Thornbury Township Official Map, adopted by the Township on May 21, 1996; and, from the "Recommended Bikeway Network Functional Classification Map" prepared by the CCPC in 1997. The proposed walking trials are those shown on the Thornbury Township Official Map.

The bike routes shown on Map 4C should be accommodated and promoted with lane widening and signage as these roadways are improved, as shown on Map 4D, Bike Routes Improvement Needs. Since most of the proposed walking trails shown on the Official Map do follow existing rights-of-way, they must be accommodated through a combination of the land development process and through easement acquisition and/or agreements with property owners.

Table 4-3: Road Inventory

	Road	Neighborhood	Functional Classification	Maintenance Responsibility	Length (ft.)	Width (ft.)	Sq. Yrds.	Yr. Paved	Yr. Sealed	Bike Route [1]	Daily Traffic Volume [2] ATD	Daily Traffic Volume [2] Year
1.	Audubon La	Thornbury Estates	Local road		1,470	23	3,757	1983?				
2.	Augusta Dr	Greens at Penn Oaks	Private road		336							
3.	Bainbridge Dr	Bainbridge	Local road		2,419			1994				
4.	Beech La	Deer Pointe	Local road		268	22	655	1995				
5.	Braxton La	Bainbridge	Local road		1,132			1994				
6.	Bridlewood Bl	Brandywine At Thornbury	Local road		4,494							
7.	Brinton Lake Rd		Local road		1,022	22	2,498	1990				
8.	Buck La	Thornbury Estates	Local road		1,465	23	3,744	1983?				
9.	Buckeye La	Springhouse At Thornbury	Private road		1,202							
10.	Casey La	Thornbury Knoll	Local road		869	26	2,510	1995				
11.	Chadds Cove		Local road		550			1991				
12.	Chaps La	Brandywine At Thornbury	Private road		1,557							
13.	Cheyney Rd		Minor Collector		4,447	24	11,859	92-94		twp.	2,498	1999
14.	College Hill Dr		Local road		1,992	22	4,869	1986				
15.	Cope Rd	Cheyney University	Private road		3,735							
16.	County La		Private road		845							
17.	Creek Rd		Local road		547					twp.	1,503	1999
18.	Cricklewood Rd	S. Concord Rd.	Local road		2,765	28	8,602	1978				
19.	Crop Ct	Brandywine At Thornbury	Local road		167							
20.	Crows Nest Ci	Deer Pointe	Local road		230							
21.	Currycomb La	Springhouse At Thornbury	Private road		306							
22.	Dayspring La	Deer Pointe	Local road		589	22	1,440	1993				
23.	Deer Pointe Rd	Deer Pointe	Local road		2,444	22	5,974	1993				
24.	Dilworthtown Rd		Minor Collector	state	1,562					twp.	2,849	2000
25.	E Street Rd		Minor Arterial	state	16,534						11,295	1999
26.	Echo Hill Rd	Westtown-Thornton Rd.	Local road		866	28	2,694	2001	1992			
27.	Fieldstone Dr	Deer Pointe	Local road		796	22	1,946	1993				
28.	Forelock Ct	Brandywine At Thornbury	Private road		536							
29.	Four-In-Hand Ct	Brandywine At Thornbury	Local road		228							
30.	Fox Meadow La	Fox Meadows	Local road		2,424	28	7,541	2001				
31.	Greenbriar Dr	Greens at Penn Oaks	Private road		3,201							
32.	Greentree Dr	Thornbury Estates	Local road		5,968	23	15,252	1994			583	1999
34.	Huntrise La		Private road		876							
35.	Huntteam La	Brandywine At Thornbury	Private road		440							
36.	Jumper La	Brandywine At Thornbury	Private road		295							
37.	Kashmir Dr		Private road		726							
38.	Leadline La	Brandywine At Thornbury	Local road		1,957							
39.	Lydia La	Brandywine At Thornbury	Private road		1,311							
40.	Martingale Rd	Brandywine At Thornbury	Private road		887							
41.	Meadowcroft Circle	Westtown-Thornton Rd.	Local road		456	28	1,419	2002				
42.	Meadowcroft Road	Westtown-Thornton Rd.	Local road		1,011	28	3,145	2002				
43.	Militia Hill Dr	Thornbury Knoll	Local road		2,457	26	7,098	1995				
44.	Northgate Rd	S. Westbourne Rd.	Local road		1,826	24	4,869	2002				
45.	Old Bailey La	Penn Oaks	Local road		3,040	28	9,458	1988				
46.	Old Woods Rd	Deer Pointe	Local road		1,940	22	4,742	1995				
47.	Paddock La	Brandywine At Thornbury	Private road		266							
48.	Paine Dr	Thornbury Knoll	Private road		693	26	2,002	1995				
49.	Penn Oaks Dr	Penn Oaks	Private road		2,653	28	8,254	1990				
50.	Pony Ct		Private road		133							
51.	Pump House La	Springhouse At Thornbury	Private road		794							
52.	Red Lion Rd	Thornbury Estates	Local road		1,920	23	4,907	1994				
53.	Reisling La	Springhouse At Thornbury	Private road		514							
54.	River Birch La	Springhouse At Thornbury	Private road		329							
55.	S Concord Rd		Minor Collector		7,394			94-01		twp.	6,897	2002
56.	S New St		Local Road		3,981	20	8,847	1984		twp.	2,036	2000
57.	S Westbourne Rd		Local road		5,006	20	11,124	1994				
58.	S Westtown Rd		Minor Collector	state	4,744							
59.	Sidesaddle Place	Brandywine At Thornbury	Private road		2,203							
60.	Smoke House Rd	Springhouse At Thornbury	Private road		428							
61.	Southgate Rd	S. Westbourne Rd.	Local road		1,346	24	3,589	2002				
62.	Spur La	Brandywine At Thornbury	Private road		1,128							
63.	Stirrup Ci	Brandywine At Thornbury	Private road		663							
64.	Stone Fence Rd	Springhouse At Thornbury	Private road		252							
65.	Surrey Rd	Thornbury Estates	Local road	state	2,375	23	6,069	1983?				
66.	Tanguy Rd		Minor Collector	state	519							
67.	Thornbury Rd		Local road		1,481	20	3,291	1984		twp., cc		
68.	Thornton Rd		Local road		489							
69.	Timberline Tr	S. Concord Rd.	Local road		1,480	26	4,276	1999				
70.	Truth Rd	Cheyney University	Private road		742					twp.	1,998	1999
71.	Twaddell Dr	Deer Pointe	Local road		1,792	22	4,380	1995				
72.	W Deer Pointe Rd	Deer Pointe	Local road		1,785	22	4,363	1995				
73.	W Street Rd		Minor Arterial	state	5,755							
74.	Westtown Thornton Rd		Minor Collector	state	5,386					twp.	1,373	1998
75.	William Penn Bl	Penn Oaks	Local road		4,025	24	10,733	1995	1991		565	2002
76.	Wilmington Pk		Major Arterial	state	3,462							
77.	Woodbine Rd	S. Concord Rd.	Local road		1,252	28	3,895	1978				
78.	Woodhaven Rd	S. Concord Rd.	Local road		1,078	24	2,875	1994				
79.	Zachary Dr	S. Westbourne Rd.	Local road		489							
					150,745							
					28.6	miles						

[1] Bicycle routes: twp = shown on Township Official Map, cc = designated by Chester County.
[2] Highest volumes recorded on any road segment. Various studies, 1997-2002.
[3] Brandywine at Thornbury roads are scheduled for dedication to the Township in 2004.

G. SUMMARY AND PLANNING IMPLICATIONS

The purpose of the Transportation and Circulation Plan is to create policies that will achieve the circulation goals of the Township. The main circulation goals of the Township are to continue and enhance the efficiency and safety of the current circulation system while preserving the rural character of the community. A principal means for achieving this will be to encourage through traffic to use highways functionally designed to accommodate through traffic. The following observations were made as a result of collecting and analyzing traffic-related data for the Township.

	Observation	Implications
Public Transportation	Public transportation is not very convenient to residents and is not significantly utilized for commuting to work.	Consider surveying residents about work destinations, desired access locations and their willingness to use public transportation if it was more convenient and available. Based on the results, be prepared to work with SEPTA to improve access, availability, and types of public transportation.
Circulation System		
• Roadway Conditions	Table 4-2 in this Chapter presents an analysis of existing traffic conditions and planning policies for major roadways in the township.	Include the recommended road management actions listed in this table in the overall circulation recommendations of the Plan.
	Township roads carry increasing volumes of traffic each year and certain attempts to correct problems related to increased traffic have resulted in adjoining townships being adversely affected by the results.	Work with surrounding townships to develop a regional approach to improving traffic concerns and problems.
	The U.S. Rt. 202 corridor will be improved sometime in the next ten years.	- Work with PennDOT to: a) encourage the use of visual buffering and noise abatement from adjacent/nearby residential neighborhoods; and, b) encourage a non-stop flow of U.S. Rt. 202 traffic through the Township. -Discourage the use of Township residential roads as alternatives to U.S Rt. 202; and, - Coordinate with area communities and PennDOT regarding detailed plans for the U.S. Rt. 202 improvement project.
• Township Roadway Maintenance	Table 4-3 in this Chapter presents an inventory of all roadways in the Township, along with statistics regarding their length and cartway width.	This table should be used as a basis for guiding the future maintenance and improvement of all Township roadways.
Bike Routes and Trails	Bike Routes and Trails are important both as alternative means of transportation within the Township and as a recreation resource.	Bike routes shown on the Official Map should be accommodated and promoted with lane widening and signage as these roadways are improved. The proposed walking trails should be accommodated through a combination of the land development process and through easement acquisition and/or agreements with property owners.
	Certain roads are designated as Bike routes on the Township Official Map and by the Chester County Planning Commission.	There is a need to adopt as official Township policy the use and future improvement of these roadways as bike routes through the township.
	Pedestrian circulation should be facilitated throughout the Township.	There is a need to prepare a Township-wide Bicycle and Trail plan to determine the alignment of trails, roads to contain bicycle lanes, designated bike routes, and the connection to sidewalk systems within residential and commercial developments.

5. ENVIRONMENTAL, CULTURAL & HISTORIC RESOURCES INVENTORY AND ANALYSIS

This chapter includes an inventory of environmental, cultural and historic resources in the Township, as well as a discussion of the implications these resources have for planning. The environmental resources inventory is shown on Maps 5A, Water Resources, and 5B, Land Resources. Historic resources and scenic roads are shown on Map 5C. A summary is provided at the conclusion of the chapter.

A. ENVIRONMENTAL RESOURCES

While virtually all of the Township's original wooded landscapes have been altered by farming and land development, significant areas of woodlands remain along the steep slopes and stream valleys that are both difficult to develop and even more difficult to farm. Recent land development and zoning regulations discourage the development of these areas. Today they remain as significant remnants of the natural landscapes that are valued and appreciated for their scenic qualities and recreational opportunities.

Stream Valleys

Stream valleys are defined as those areas containing stream channels (including creeks, streams and rivers) and their associated banks which may contain slopes and wooded areas. Floodplains, wetlands, and hydric soils form the stream valleys and represent the most extensive and contiguous areas of undeveloped land in the Township. As mentioned above, this is due to the fact that these areas present major impediments for development. They frequently flood and the areas of hydric soils are either seasonally covered with standing water or have high water tables that present problems for the construction of foundations and basements. These stream valleys are protected through floodplain and wetland regulations in the Township's zoning and land development ordinances.

These areas provide room to accommodate storm floodwaters and the adjacent hydric soils and wetlands work to cleanse and recharge stormwater runoff. Therefore, the protection that is provided by existing Township ordinances should continue. The water resources management plan for Chester County, *Watersheds,* provided a planning basis for the establishment of "riparian buffer zones" adjacent to streams to help enhance the natural cleansing and percolation of stormwater runoff before it reaches the stream. Riparian buffers refer to the vegetated area of land adjacent to a pond, lake, stream, creek, river or wetland. Riparian areas form the transition between the aquatic and terrestrial environment[4]. *Watersheds* also provides information for the establishment of required riparian buffer zones along steams. It also contains extensive analysis of groundwater aquifers in the County and techniques available to enhance the quantity and quality of groundwater replenishment. This plan should be consulted to investigate the need to implement riparian buffer zones and aquifer recharge protection and enhancement measures, particularly since most of the Township relies on well water.

[4] *Landscapes Community Planning Handbook, CCPC, Volume II, 1999, p. 21-1.*

Floodplains

Floodplains are the level areas next to streams which are at risk of flooding during major storms. While most of the floodplain areas shown on Map 5A fall along waterways, this does not provide any assurance as to the impact storms can have to areas outside of the flood zone. The boundaries shown on Map 5A are depicted as the Federal Emergency Management Agency's 100-year floodplain and is determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur.

Wetlands and Hydric Soils

Wetlands are defined as low-lying areas inundated by water at a frequency and duration sufficient to support wetland vegetation (e.g. wetlands include such areas as swamps, marshes and wet meadows). Wetlands remove pollutants through a series of chemical, physical, and biological mechanisms.[5] Wetlands act to recharge groundwater and help purify surface waters, serving many functions in the ecosystem. While the final determination must be made by a trained biologist or soil scientist on a site-by-site basis, several areas have been mapped from existing sources: the National Wetlands Inventory and hydric soils, mapped from the U.S. Department of Agriculture (USDA), Soil Conservation Service soil survey.

Several areas in the Township are included in the National Wetlands Inventory and are associated with Waln Run and Chester Creek. These are also shown on Map 5A.

Hydric soils are generally unsuitable for development due to their high water tables. These soils, as mapped from the USDA Soil Conservation Service Soil Survey, are shown on Map 5A. The largest area generally follows the low lands through the center of the Township, an area that, for the most part has remained undeveloped. Resident complaints of wet basement and flooding problems adjacent to these areas attest to the extent of hydric soils in this area. Another extensive area of hydric soils is in and around the Chester Creek and Goose Creek Junction, along the railroad line to the south of Goose Creek Park.

Prime Agricultural Soils

Prime Agricultural Soils, which are shown on Map 5B, are soil types that are fertile and considered productive for agriculture. They consist of capability Classes I, II, and III soils. Capability classification is a grouping of soils that shows, in a general way, how suitable they are for most kinds of farming. Class I is the best suited soils types for crop growing and have the fewest limitations. Class II and III soils have some limitations which reduce the choice of plants that can be successfully grown in them and may also require special conservation practices.[6] These soils were classified by USDA Soil Conservation Service Soil Survey maps. Prime agricultural soils are located virtually in all areas outside of the stream valleys of the township. The exception being newly categorized urban soils. These are typically categorized as such, due to the result of substantial residential development and the inability to find a dominant soil type.

[5] *Watersheds, 2002, Chester County Water Resources Authority, p. 240.*
[6] *Soil Survey, Chester and Delaware Counties, USDA Soil Conservation Service, pp. 4-5.*

Watersheds, Watershed Boundaries and Headwater Areas

Watersheds are defined as an area of land that drains into a particular river or body of water; usually divided by topography or ridgelines.[7] Thornbury Township is within the Brandywine Creek (via Radley Run) and Chester Creek (including Goose Creek and Waln Run) watersheds. The Pennsylvania Department of Environmental Protection (PA-DEP) assigns all surface waters in Pennsylvania to one of the four following designated protected uses:

Aquatic Life
- CWF Cold Water Fishes—Maintenance or propagation, or both, of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat.
- WWF Warm Water Fishes—Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.
- MF Migratory Fishes—Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which ascend to flowing waters to complete their life cycle.
- TSF Trout Stocking—Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.

Water Supply
- PWS Potable Water Supply
- IWS Industrial Water Supply
- LWS Livestock Water Supply
- AWS Wildlife Water Supply
- IRS Irrigation

Recreation and Fish Consumption
- B Boating
- F Fishing
- WC Water Contact Sports
- E Esthetics

Special Protection
- HQ High Quality Waters
- EV Exceptional Value Waters

Based on their observed water quality, PA-DEP has designated the Township's streams as Aquatic Life trout stocking, warm water fishes streams. This designation is lesser than the Special Protection designation of "Exceptional Value" (EV) waters and "High Quality" (HQ) waters which single out streams that are highly valued for their water quality and relatively unspoiled character.[8] Such streams have higher standards when reviewing discharge proposals and considering watershed protection measures. These factors are considered when the PA-DEP reviews permit applications for septic and stormwater management facilities.

In addition, Chester and Goose Creeks are also listed by the PA-DEP as "impaired streams" having "biodiversity concerns." Impaired streams include streams that do not meet the water

[7] *Watersheds, Chester County Water Resources Authority, 2002, p. 240.*
[8] *Watersheds, Chester County Water Resources Authority, 2002, p. 52.*

quality standards needed to support their designated uses. States must determine the cause of the impairment, the sources of the cause and create a plan to address the impairment.[9] *Watersheds* reports that this impairment is related to flow and habitat alteration, siltation and water flow viability. These are strong indications that the quality of all of the Township's streams could use improvement.

Watershed boundaries are delineated by significant changes in topography (ridges) and define the limits of influence on a stream. Each stream has a drainage basin within which all water flows only to that stream, so anything occurring within its drainage basin has the potential to affect the water quality of the stream. There are two (2) major watersheds within the Township, Brandywine Creek Watershed and Chester Creek Watershed. The watersheds delineation fall roughly along U.S. Rt. 202, running north to south, as shown on Map 5A.

Chester Creek Watershed - Water quality

The Chester County Watersheds Regional Prioritizations states that the Chester Creek Watershed ranks among the highest overall priority watersheds for water quality restoration and storm water management.

Brandywine Creek Watershed - Water quality

The Chester County Watersheds Regional Prioritizations reports that the Brandywine Creek Watershed ranks among highest overall priority watersheds for water quality restoration and storm water management. Additionally, it ranked among highest overall priority watersheds for stream/resources preservation.

Headwaters

Stream headwaters are defined as the uppermost tributaries of a stream or river, which are known as "first order streams."[10] Contamination or disturbances in these areas can potentially affect the health of the entire stream course. Virtually all areas of the Township drain into first order streams and should therefore be considered as headwaters. Only a small area adjacent to Goose and Chester Creeks drains directly into these 2nd and 3rd order streams.

The headwaters within the Chester Creek Watershed fall within the Delaware River Basin Commission (DRBC) and Southeastern Pennsylvania's Ground Water Protection Area (GWPA). Portions of the Brandywine Creek Watershed fall within the Delaware River Basin Commission (DRBC) and Southeastern Pennsylvania's Ground Water Protection Area (GWPA).

The Chester County Water Resources Authority is developing a model stormwater management ordinance that the Township should consider for adoption.

Agricultural Security Areas

The Agricultural Security Area program was established by PA Act 43 in 1981 to help protect the agricultural industry in Pennsylvania from increasing development pressure. The program helps insulate farmers from some governmental regulations and activities, such as nuisance ordinances, that could hinder normal farming practices.[11] To qualify for such designation, the

[9] *Watersheds, Chester County Water Resources Authority, 2002, p. 52, 54.*
[10] *Watersheds, Chester County Water Resources Authority, 2002, p. 233.*
[11] *Landscapes Community Planning Handbook, Volume II, CCPC, 1999, p. 39-2.*

area must include at least 250 acre, be requested by the landowners via petition, and created by municipal action. Security area status protects farmers from nuisance ordinances that may be adopted by municipalities, state eminent domain claims, and qualifies landowners for possible participation in the state and county agricultural easement/development rights purchase programs

Sixteen (16) parcels in the Township have been included in the Township's "Agricultural Security District." These parcels, which amount to 340 acres, are also shown on Map 5B.

Slopes and Woodlands

Since most of the areas shown on Map 5A as floodplains and hydric soils are also wooded, these areas also provide extensive, linear areas of contiguous woodlands (shown on Map 5B). Most of the steeply sloped areas -- shown on Map 5B as areas of 15-25% and 25% or greater slopes -- are also wooded, and adjacent to the stream valleys. These sloped areas remain mostly wooded since they were also difficult to farm and develop, and they are now also protected by regulations in the township's zoning and land development ordinances. In addition to their natural scenic landscape quality, these woodlands also provide wildlife habitat and are extremely effective in enhancing groundwater recharge and limiting soil erosion.

B. CULTURAL AND HISTORIC RESOURCES

Cultural and Historic Resources are shown on Map 5C, which includes historic properties, cultural resources and scenic roads.

Cultural Resources

Prior to the rapid period of development in the 1990's and the resultant increase in population, the Township's rural character, low population and compact geographic area did not lend itself to the need to create, or the ability to support, various cultural venues. The existence of well-established and world-renowned museums, art galleries, playhouses, music halls and similar cultural activities in the surrounding area and nearby municipalities, including West Chester, Wilmington, and Philadelphia provided and continue to provide sufficient cultural outlets and activities for the community. Therefore, the Township's infrastructure and other resources are not and will not be impacted by the necessity of making such resources available within the Township in the future.

Historic Properties

The Township Historical Commission maintains a list of fifty (50) properties with fifty-five (55) structures designated as "historic." This list includes properties listed in the National Register of Historic Places (a list maintained by the U.S. Department of the Interior), the Pennsylvania Historic Resources Survey or the Chester County Historic Resources Survey. While these designations provide a form of official recognition, none of these designations provide any significant degree of protection. Three (3) properties are on the National Register, thirteen (13) are listed in the Pennsylvania Historic Resources Survey and thirty-nine (39) are listed in the Chester County Historic Resources Survey. A complete list of these properties with numbers keyed to Map 5C is included as Table 5-1 on the following page.

National Register

The National Register, and the associated National Historic Landmark designation, do provide some protection from adverse impact by federally funded projects -- such as may be the case

with highway improvements. The following three (3) resources have this designation in the Township:

- the Goose Creek Bridge
- the period revival English country house and carriage house at 920 E. Street Road; and,
- the Brandywine Battlefield National Landmark Historic District.

The Goose Creek Bridge was included as part of a "multiple resource" National Register nomination of a number of Chester County bridges. Since the bridge is along state PA Rt. 926, it is protected from adverse impacts that may result from the improvement or widening of this road, if such projects use federal funds.

The house and carriage house at 920 E. Street Road is individually listed on the National Register. Similarly, since it is along PA Rt. 926, it is protected from adverse impacts from possible road improvements using federal funds. The National Register status also qualifies the property owner for federal income tax credit (currently 20%) on rehabilitation costs if the property is used for income generating purposes. If this historic tax credit is not used, there are no restrictions on the alteration or demolition of these buildings.

The Brandywine Battlefield National Landmark Historic District is a very unique designation. First, the district is very large, covering ten (10) square miles and including over 375 parcels within six (6) municipalities and two (2) counties. Within Thornbury it includes all areas west of U.S. Rt. 202. It was nominated very early in the National Register process, at a time when significant documentation and study was not as rigorously required as it is today. As a result, the nomination has been revisited several times to update and improve the documentation and boundary delineation of this district. The "period of significance" of this district is the time up to and including the dates of the battle, September 10 & 11, 1777. This means that to be a "contributing resource" within the district, the building or structure would need to date from that period.

Although the "National Historic Landmark" designation provides more recognition and status, it also provides the same degree of protection and tax credit incentives that are available to National Register properties. Fortunately, the recent acquisition of part of the Spackman farm has protected some of this area. A large part was lost, however, with the recently developed Brandywine at Thornbury residential community, and additionally, the rest of the Spackman farm is still not protected.

Pennsylvania and Chester County Historic Resources Survey

The principal difference between these surveys is the level of required documentation. Since they are surveys, they do not necessarily represent an evaluation of these properties. They are recognized as part of local initiatives to document their historic value. Documentation on a Pennsylvania Resource Survey form is typically the first step in a National Register Nomination and requires a considerable degree of research. A Chester County Survey was prepared after a visual survey of historic buildings in the early 1980's. The general criteria for this survey was that the properties be at least fifty (50) years or older. Neither designation provides direct protection, but listing in the Pennsylvania Survey means that the property will be singled out for investigation in any reviews of federally funded projects by the Pennsylvania Bureau for Historic Preservation, which is a division of the Pennsylvania Historical and Museum Commission. Although this is not the case in Thornbury Township, several Chester County municipalities use this survey as a basis for "historic preservation zoning ordinances" that provide protection by

permitting additional uses and development intensity in exchange for the preservation of surveyed historic resources.

Table 5-1: Thornbury Township Historic Resources Inventory

Site#	Status [1]	Parcel#	Site Address	Description
1	PA	66-3-2	1256 Thornton Road	Stone Farmhouse (1709) & Wing (1730-1780)
1a.	PA	66-3-2	1254 Thornton Road	Barn
2	PA	66-3-2	1252 Thornton Road	Frame Tennant House (1860-1900)
3	CC	66-3-6	760 W. Street Road	Corner Chimney House - Serpentine (1750-1850)
4	CC	66-3-179	137 Leadline Lane	Serpentine Farmhouse (1730-1780)
4a.	CC		Dismantled	Barn (1820-1860)
5	CC	66-1-4.03	2 E. Street Road	Stone Vernacular (1820-1860)
6	CC	66-2-1.07	1200 S. Concord Road	Fair Acres Farm - Farmhouse & Wing (1730-1780_
7	CC	66-2-1.06	1260 S. Concord Raod	Stone Vernacular
8	CC	66-2-6.03	750 S. Westbourne Road	Stone Springhouse (1680-1730)
9	CC	66-2-6.03A	756 S. Westbourne Road	Stone Farmhouse (1680-1730) & Wing (1730-1780)
10	PA	66-2-5.01	750 E. Street Road	Serpentine Carriage House (1880)
10a.	PA	66-2-3	720 E. Street Road	Victorian
10b.	PA	66-2-4	740 E. Street Road	Lenape - Victorian Gothic (1840-1859)
11	CC	66-2-17	850 E. Street Road	Frame Vernacular (Westtown Train Station)
12	CC	66-2-11	870 E. Street Road	Serpentine Rural Gothic (1860-1879)
13	CC	66-2-16	1220 Westtown-Thornton Road	Frame Vernacular (1860-1900)
14	NR	66-2-28.01	920 E. Street Road	Period Revival English Country (1898-1907)
15	NR	66-2-28.01	920 E. Street Road	Green Echo Carriage House (1898-1907)
16	CC	66-2-29.01	1020 E. Street Road	Springhouse
17	CC	66-2-39	1400 E. Street Road	Farmhouse (1780-1820)
18	PA	66-2-41.01	1231 Cheyney Road	Serpentine Farmhouse (1860-1879)
19	PA	66-2-4	1230 Cheyney Road	Serpentine Farmhouse
20	PA	66-2-41	1251 Cheyney Road	Century Farm - Stone Colonial Farmhouse (1730-1780)
21	CC	66-2-53	1303 Creek Road	Farmhouse (1780-1820)
22	CC	66-2-52	1343 Creek Road	Mansard Victorian (1880-1899)
23	CC	66-2-6.01	680 E. Street Road	Farmhouse (1790)
24	PA	66-2-61	500 Thornton Road	Stone Colonial (1680-1780)
25	CC	66-2-33	1281 S. Westtown Road	Stone Colonial (1680-1730)
26	CC	66-2-34.01	1269 S. Westtown Road	Stone Farmhouse (1680-1730)
27	PA	66-2-26	1257 Westtown-Thornton Road	Mary Cassat Home - Victorian Gothic
27a.	PA	66-2-26	1257 Westtown-Thornton Road	Barn
28	CC	66-2-25	1281 Westtown-Thornton Road	English Cottage Period Revival
29	CC	66-2-21	1370 Westtown-Thornton Road	Victorian
30	CC	66-2-23	1357 Westtown-Thornton Road	Stone Colonial, Barn
31	CC	66-4-20.02	1375 S. Concord Road	Bee Hive - Stone Quaker Farmhouse (1704/1780)
32	CC	66-4-18.04C	1350 S. Concord Road	Brick Farmhouse (1865)
33	CC	66-4-18	1340 S. Concord Road	Stone Farmhouse & Wing (1721-1750)
34	PA	66-4-19.02	1339 S. Concord Road	Greystone - Federal/Classic Revival (1846)
35	CC	66-4-10.01	1333 S. Concord Road	Carriage House (1860-1900)
36	CC	66-4-18.01A	1326 S. Concord Road	Log Cabin (1905)
37	CC	66-2-7	1311 S. Concord Road	Colonial Revival (1860-1900)
38	CC	66-2-1.04	1 Huntrise Lane	Carriage House (1860-1900)
39	CC	66-2-8	1315 S. Concord Road	Farmhouse/Frame Vernacular
40	CC	66-2-1.02	1300 S. Concord Road	Victorian (1863)
41	CC	66-2-1.03	4 Huntrise Lane	Cottage
41a.	CC	66-2-1.03	4 Huntrise Lane	Barn
42	CC	66-2-1.04B	3 Huntrise Lane	Springhouse
43	CC	66-2-13	1200 Westtown-Thornton Road	Arts & Crafts - Bungalow
44	CC	66-2-12	880 E. Street Road	Frame Bungalow
45	CC	66-2-59	30 Dilworthtown Road	Colonial Revival (1930-1940)
46	CC	66-2-45	10 County Lane	
47	CC	66-2-43	20 County Lane	
48	CC	66-2-44	40 County Lane	
49	NR	na		Goose Creek Bridge
50	NHL	na		Brandywine Battlefield

[1] Status: NHL - National Historic Landmark; NR - National Register of Historic Places; PA - PA Historic Resources Survey; CC - Chester Co. Historic Resources Survey

Potential Resources

It was observed during the initial community participation phases of this Comprehensive Planning project that the cluster of buildings in the vicinity of the Westtown Train Station could qual-

ify as an historic district. It was also observed that the Chester County Survey should be updated.

Scenic Roads

Map 5C also highlights several roads in Thornbury Township that have been identified in the 1993 Township *Open Space, Recreation and Environmental Resources Plan* as "scenic roads." These roads, in addition to Cheyney Road, were mentioned during the neighborhood meetings as scenic roads through the township along which the adjacent landscapes are particularly attractive and worthy of preservation.

These roads include:

- Street Road (PA Rt. 926) -- All sections of this road west of U.S. Rt. 202 and east of South Concord.
- South New Street -- All sections.
- Thornbury Road -- All sections.
- South Concord Road -- All sections south of its intersection with Westbourne Road.
- Westtown-Thornton Road -- All sections.
- South Westtown Road -- All sections.
- Dilworthtown Road -- All sections.
- Cheyney Road -- All sections.

Scenic road designation can be used as a basis for guiding the future use and improvements to the road and for implementing controls via zoning and land development ordinances to help protect the landscapes along these roads.

C. SUMMARY AND PLANNING IMPLICATIONS

The Township contains a significant number of environmental and historic resources. Significant environmental resources include the Chester Creek, Goose Creek, and the Waln Run, although streams in the Chester Creek watershed are considered impaired. Sixty-five percent (65%) of the Township's soils are classified as Prime Agricultural Soils. Historic resources are found throughout the township. Fifty-five (55) structures in the Township are historic and three (3) are listed on the National Register of Historic Places, including the Brandywine Battlefield. Several roads in the Township are considered scenic, including New Road, Thornbury Road, Westtown-Thornton Road, Cheyney Road and South Westtown and Dilworthtown Roads.

	Observation		**Implications**
	Zoning Ordinance	*Subdivision & Land Development Ordinance*	
Streams/ Waterways	Only if within floodplain or wetlands.	Only if within floodplain or wetlands.	There is a need to amend the stormwater ordinance to require water quality measures and infiltration standards consistent with *Watersheds*. May need to adopt CCWRA's model SWM ordinance.
Riparian Buffer	no protection	no protection	Adopt riparian buffer ordinance consistent with *Watersheds*.
Floodplains	Art. VIII. Floodplain Conservation District. Requires delineation and limits uses in floodplains	n/a	Adequate protection
Wetlands	§155-111. Determination of gross density refers to SALDO §115-29, and §155-113.C. Wetlands requires 100-foot buffer from wetlands edge	SALDO §115-29(11)&(b). Requires wetland delineation if tract contains hydric soils.	Adequate protection
Hydric Soils	§155-111. Determination of gross density refers to SALDO §115-29.	SALDO §115-29(11)&(b). Requires wetland delineation if tract contains hydric soils.	Adequate protection
Woodlands	§155-113. Woodland preservation (new). Requires tree protection and replacement	n/a	Adequate protection
Historic Resources	Art. VI. Historic Battlefield Overlay District provides some protection via reduces density, and Art. XIX Historic Resources Preservation requires review of renovations/additions and 300-foot setback from new development and permits a "bed-and-breakfast inn" as an additional use incentive for preservation.	no protection	1. Consider additional uses as incentives to preserve historic buildings. 2. Adopt a "167" Historic District Ordinance for Westtown Station Village and S. Concord Rd. Corridor, consistent with *Landscapes* Historic Resources Objective
Scenic Roads	no protection	no protection	Designate Scenic Roads and adopt scenic roads protection standards consistent with *Landscapes* Scenic Resources Objective.

6. COMMUNITY FACILITIES AND SERVICES INVENTORY AND ANALYSIS

Community facilities and services are provided by both the public and private sectors, and include code enforcement, police protection, community parks, trash and recycling collection, and sewer and water service. The focus of this chapter is to inventory the services and facilities provided for Thornbury Township residents and businesses and to assess the extent to which they meet existing and future needs. A Summary is provided at the conclusion of the chapter.

A. TOWNSHIP FACILITIES

The Township administrative offices at 8 Township Drive, Cheyney, PA are located in Delaware County and leased from Thornbury Township, Delaware County. Additional township facilities include park and open space lands, and two (2) commercial lots adjacent to the Westtown Train Station.

All township facilities are listed in Table 6-1, Township Facilities, below and shown on Map 6A, Community Facilities and Services. The township currently owns 108 acres, 105 acres of park and open space and about three (3) acres of other property. Among the park parcels, only two (2) have been developed as active recreation facilities, Goose Creek Park and the soccer fields at the southwest corner of Street and South Westtown Roads.

The two properties adjacent to the Westtown Train Station include a 1.93 acre parcel that contains two leased buildings, one to the Goose Creek Grill restaurant and the other to the Westtown Post Office, a private publishing company and a retail use. These uses, along with the commercial use of the SEPTA owned train station, forms a small commercial village center. The township has considered the smaller 1.06 acre property for a possible future township use.

Table 6-1: Township Facilities

Facility	Use / Function	Size
Municipal Building	Building leased from Thornbury Township, Delaware County for Township Administrative Offices and Meeting Hall	approximately 3500 s.f.
Park Land and Open Space:		**Acres**
- Goose Creek Park	Active Community Park	26.03
- Soccer Fields	Soccer Fields leased to West Chester Soccer Club	34.29
- Squire Cheyney Park	Currently leased as crop land	27.98
- Waln Run Park	Undeveloped parkland	12.47
- South New Street Open Space	Undeveloped open space	4.24
Westtown Train Station Village		
- Commercial land	2 buildings leased as office/retail, Goose Creek Grill & post office	1.93
- Undeveloped lot	Possible future Township use	1.06
Total Township Owned parcels		108.00

The parks are maintained for the Township by private contractors and the Parks and Recreation Commission works with the Board of Supervisors in administering their overall operation and maintenance. The Commission is also active in providing recreation programs.

B. PUBLIC SAFETY AND EMERGENCY SERVICES

Police services are provided by Westtown East Goshen Townships Police Department (WEGO) under a contract between Thornbury Township and the joint municipal department. There are no police, fire or ambulance facilities in Thornbury Township.

Police Services

Table 6-2 presents activity reports in Thornbury Township for the years 2000, 2001 and 2002. Overall total calls have increased from 1,760 to 2,911 over these three (3) years, while calls related to the crimes of rape, murder, burglary and DUI have increased from seven (7) to twenty-six (26). While these changes may appear significant, the Township population has also increased considerably in recent years, a new shopping center has opened, and the actual rate of reported crime in the Township is actually quite low.

Table 6-2: Police Activity Report

Police Calls	2000	2001	2002
Total calls	1,760	1,503	2,911
Crime related:			
- Rape	0	0	1
- DUI	4	9	10
- Burglary	3	1	15
- Murder	0	0	0
	7	10	26

Source: Westtown-East Goshen Township Police Department, July 11, 2003

Residents that attended various neighborhood meetings held during the visioning stage of this project had high praise for police service, commenting that local police response time and service is excellent.

Between 1999 and 2003 police protection costs increased 111% and are projected to increase further in coming years. The Township is considering the following options for providing protection for the community:

- contracting with another local police department
- using the State Police
- establishing a township local police department
- participating in a joint regional police department with another municipality or group of municipalities
- minimal Township police force supplemented by WEGO and/or the PA State Police.

Ambulance Service

Ambulance service is provided by the Good Fellowship Ambulance Club in West Chester and the Concordville Fire and Protective Association, Ambulance Division, in Concordville. Both of these services are dispatched by the Chester County Regional Emergency Services Council based on the proximity of available ambulances. Overall, this service is well regarded in the township and there appears to be no need to enhance the service. The township makes regular contributions for this service.

Fire Service

Fire protection east of Westtown-Thornton Road is provided by the Concordville Fire Company. The Fame Fire Company in West Chester provides service for the remainder of the Township. There were no complaints about this service in the visioning phase of this project. The Township participates in providing this protection with annual contributions to both of these fire companies, and provides additional donations when requested for specific projects.

C. TOWNSHIP INFRASTRUCTURE SERVICES

Roads and Snow Removal

The Township contracts with private contractors for Township owned local road maintenance and snow removal. State highways, such as U.S. Rt. 202 and PA Rt. 926 are maintained by PennDOT. There are no road maintenance shops or storage facilities in the Township. There is a need for a road salt storage facility in the Township to reduce transit costs for salt trucks. Private roads are maintained by their respective home owners associations.

The Township's road network is discussed in more detail in Chapter 4, Transportation and Circulation.

Water and Sewer Service

While most Township households use on-site wells and septic systems, several areas of the Township are serviced with public or community systems. These public and community water and sewer services areas are depicted on the Community Facilities and Services Map and listed in Table 6-3 below.

Table 6-3: Township Water and Sewer Service

Water Service	
Provider	**Service Areas**
Philadelphia Suburban Water Company	Brandywine at Thornbury, Thornbury Knoll, Deer Pointe, 1703 Farms Community and the Greens at Penn Oaks; the commercial properties along U.S. Rt. 202
Chester Water Authority	Cheyney University; private apartment building on Cheyney Road
Sanitary Sewer Service	
Community/Public System	Brandywine at Thornbury, Thornbury Knoll and the Greens at Penn Oaks
Package Plant	Cheyney University

Thornbury has recently completed an update of their "Act 537" Sewage Facilities Plan. This plan identifies the Thornbury Estates community, where there have been numerous on-site septic system failures, for future public sewer system service. Thornbury Estates also experiences well problems and it is also being considered for public water service. The Philadelphia Subur-

ban Water Company also provides sewage services, and they currently own and operate the community drip irrigation system for Brandywine at Thornbury and operate the sewer system at the Greens at Penn Oaks. The on-site systems in the rest of the township appear be adequate at this time. The Township is moving toward a mandatory pumping sewage management program for individual on-site systems.

Stormwater Management

Stormwater management is required under Act 167 for all new development projects, as a component of the Subdivision and Land Development Ordinance. The design criteria generally require that stormwater systems be designed to permit no increase in the rate of runoff over that which currently exists at a site. Most of the existing stormwater management systems include retention basins that are maintained by homeowner's associations, and there are no Township owned stormwater management facilities. The Township is currently investigating a revision of the stormwater management ordinance to require enhanced groundwater recharge and stormwater quality. Existing stormwater and flooding problems have been reported for areas within the Deer Pointe development. Much of the Westtown Train Station Village is located within the Goose Creek floodplain.

Solid Waste

Thornbury Township is not involved in providing trash and recycling collection and all property owners and homeowner's associations must individually contract with private haulers for this service. At recent public meetings, residents expressed interest in having the Township investigate providing this service, particularly since the Township would be in a better position to negotiate a lower price for this service. Since leaf burning is still permitted in the Township, there is also interest in the Township providing a leaf collection and Christmas tree collection/recycling service.

D. REVENUES AND EXPENDITURES

Township General Fund Budgets for the past three years are shown in Table 6-4, which also reports the percentage change in expenditure and revenue accounts from 2000 to 2004, along with the percentage each account represents in the 2004 Budget. The township operates with an annual general fund budget of about $1,200,000. About seventy percent (70%) of annual revenues are from local real estate, real estate transfer and earned income taxes. Other revenues are from permit and service fees, fines, rents and interest. As a result of a significant increase in housing and population over this period, receipts from the real estate and earned income taxes have grown considerably.

On the expenditure side, General Government, Police Protection and Road Maintenance account for about seventy-nine percent (79%) of Township expenditures. Police Protection expenses have increased by 211% during this period, and road maintenance costs have risen by nearly 1200%. This trend should continue (although not at this rate) as higher traffic volumes increase the wear on local roads and population and commercial growth increase the need for police services.

Table 6-4: Township Revenues and Expenditures

GOVERNMENTAL FUNDS (General Fund, State Liquid Fuels Fund, Capital Fund, and Debt Service Fund)	Year ending 12/31/00	Year ending 12/31/01	Year ending 12/31/02	Year ending 12/31/03	2004 Budget	Percent of Total (2004)	2000 - 2004 % Change
Fund Balance - Start of Year	$583,705	$757,683	$784,382	$1,315,793	$0		
Receipts:							
Real Estate Taxes	$153,123	$164,019	$163,814	$237,550	$238,652	19%	56%
Real Estate Transfer Taxes	$223,948	$167,794	$87,436	$116,189	$105,000	8%	-53%
Earned Income Taxes	$463,373	$551,382	$569,574	$597,334	$579,000	45%	25%
Licenses and Permits	$23,994	$30,144	$36,899	$29,300	$51,700	4%	115%
Fines and Forfeitures	$7,080	$6,225	$18,094	$16,534	$11,047	1%	56%
Interest Earned	$45,280	$41,045	$16,867	$29,800	$19,000	1%	-58%
Rent and Royalties	$84,198	$91,054	$106,417	$90,540	$107,775	8%	28%
Intergovernmental Revenues	$53,530	$73,200	$84,288	$159,200	$133,860	10%	150%
Service Fees	$153,233	$178,548	$84,922	$67,842	$33,710	3%	-78%
Miscellaneous Revenues	$97,141	$39,582	$9,428	$3,780	$300	0%	-100%
Proceeds of Fixed Asset Allocation	$0	$3,865	$0	$0	$0		
Total Receipts	**$1,304,900**	**$1,346,858**	**$1,177,739**	**$1,348,069**	**$1,280,044**	100%	-2%
Total Receipts & Unreserved Fund Balance	***$1,888,605***	***$2,104,541***	***$1,962,121***	***$2,663,862***			
Expenditures:							
General Government	$287,825	$336,404	$344,775	$292,738	$307,403	18%	7%
Legal Fees	$16,225	$15,388	$10,734	$6,686	$20,000	1%	23%
Engineering Services	$55,580	$85,656	$42,942	$15,193	$50,000	3%	-10%
Police Protection	$180,649	$217,558	$274,878	$336,603	$561,801	33%	211%
Fire Protection	$56,372	$60,933	$52,877	$57,541	$79,025	5%	40%
Other Public Safety	$52,963	$30,952	$37,784	$14,602	$34,985	2%	-34%
Planning & Zoning	$45,724	$106,007	$43,952	$36,479	$10,900	1%	-76%
Highways and Bridges	$38,290	$279,259	$188,006	$109,921	$501,800	29%	1211%
Other Public Works	$0	$0	$27,015	$15,548	$0	0%	0%
Culture-Recreation	$30,755	$33,362	$91,050	$21,823	$20,600	1%	-33%
Principal Repayments	$217,000	$0	$0	$54,339	$24,700	1%	-89%
Interest & Debt Service	$100,015	$90,653	$90,661	$36,316	$90,654	5%	-9%
Other Miscellaneous	$20,189	$19,377	$22,782	$22,003	$23,740	1%	18%
Community Development	$29,335	$44,610	$25,917	$38,568	$0	0%	-100%
Capital Expenditure - Parks	$0	$0	$0	$0	$0	0%	
Total Expenditures	**$1,130,922**	**$1,320,159**	**$1,253,373**	**$1,058,360**	**$1,725,608**	100%	53%
Fund Balance - End of Year	***$757,683***	***$784,382***	***$708,748***	***$1,605,502***			
Total Expenditures & Fund Balance	***$1,888,605***	***$2,104,541***	***$1,962,121***	***$2,663,862***			

Sources: Thornbury Township, 2000, 2001, 2002, 2003; Thornbury Township Budget for 2004

E. SUMMARY AND PLANNING IMPLICATIONS

	Observations	Implications
Township Facilities		
• Community Facilities	The Township owned property at the Westtown Train Station includes a one (1) acre vacant parcel.	The Township should consider developing a plan for the future use of this property, such as for a Township building and community center. This would allow the Township to have their offices within the Township and would support the improvement of the Westtown Train Station Village as an important historic community center.
• Parks And Recreation	There is a need for continued acquisition and conservation of open space to maintain community character and provide additional recreation opportunities. With the exception of Goose Creek Park, there are no "Master Plans" for the future use and development of most Township owned park land.	Prepare "Site Development Master Plans" for all Township-owned park lands.
Public Safety & Emergency Services		
• Police Services	Police services are praised by residents, but there has been some recent concern regarding the escalating cost of this services and the lack of a long term police service strategy.	Consider multiple alternatives for providing police services to the community.
• Ambulance and Fire Services	The Township enjoys excellent emergency services.	The Township should continue support for the West Chester and Concordville Fire Companies in their efforts to provide this service.
Township Infrastructure Services		
• Water and Sewer Service	As documented in the Township's "Act 537" Sewage Facilities Plan, there are existing problems with on-site septic systems and wells in the Thornbury Estates community.	Help support efforts to provide public sewer service to the Thornbury Estates community. The Thornbury Estates community should be provided with public water service since this community is experiencing considerable problems with its wells.
• Storm Water Management	There are existing Goose Creek floodplain related stormwater problems in the Westtown Train Station Village area, and internal drainage problems in the Deer Pointe development.	The stormwater management ordinance could be revised to require enhanced groundwater recharge, stormwater quality issues, and to promote filtration consistent with *Watersheds*.
• Solid Waste	Residents have expressed a need for leaf collection service as an alternative to leaf burning, which creates considerable smoke.	Negotiating with private haulers may be more cost effective than the Township providing trash collection and recycling services.
	The Township does not have a solid waste management plan.	Create a township-wide solid waste plan consistent with Landscapes Solid Waste Management Objective.

7. PLAN RECOMMENDATIONS

The Comprehensive Plan recommendations are presented in this section. These recommendations are based on observations and concerns expressed at citizen participation meetings and Planning Commission Workshops, and the Planning Considerations summaries associated with the various inventory chapters prepared for this plan together with the goals and objectives set forth in Chapter 1.

The Plan recommendations are presented according to the specific plan elements as required in Section 301 of the Pennsylvania Municipalities Planning Code, which are discussed in Chapter 1 of this plan.

A. PLAN FOR LAND USE

The Future Land Use Map (Map 7A) shows the areas of the Township where the following recommendations concerning land use, zoning and development should be implemented.

1. Private Property Values. A primary goal of this plan is the preservation of private property values. The implementation of any element of this plan should consider potential impacts on private property values and be structured such that these values are preserved.
2. Future Land Use.
   a) Designations for future land use are shown on Map 7A and described below:

      Low Density Residential: Single family detached dwellings on lots no less than 40,000 square feet in area.

      Medium Density Residential: Single family dwelling units of between 4 and 10 units per acre, with designated open space areas.

      High Density Residential: Townhouses, apartments and mobile homes.

      Business/Commercial: Retail, office and commercial uses.

      Institutional: Schools, colleges, hospitals and nursing facilities.

      Agricultural: Farming is the primary use.

      Greenway Corridor: Land adjacent to waterways to be preserved to protect stream water quality and provide a linear open space network.

      Village Development: Area to be used for mixed use/village center development.

      Township Parks: Existing and proposed areas to be used for active and passive recreation.

   b) Thornbury Township's land use pattern has been well established over many years, and it is recommended that this pattern continue.
   c) Future land use should focus upon the preservation of the remaining rural character of the Township through active preservation of open space and protection of natural, scenic, and historic resources.

3. Open Space and Village Development Techniques. The Township should revise current cluster development provisions of the Zoning Ordinance to better encourage and require the following objectives:
   a) The preservation of significant natural, scenic and historic resources.
   b) The design of future development in the vicinity of Westtown Station Village to enhance the pedestrian scale, historic character and village quality of life residents of these communities currently enjoy.
   c) The preservation of open space corridors along the Waln Run and Goose Creek stream valleys through the Township. These corridors are both open space and scenic resources, and can also serve as potential pedestrian trail routes through the Township.
4. Build-Out Potential. The residential build-out analysis prepared for this plan estimates that approximately 368 new dwelling units could be constructed in the Township under the provisions and requirements of the existing Zoning Ordinance. Any revisions to the Zoning Ordinance should not increase this build-out potential.
5. Institutional Zoning. Cheyney University and other school and public facility properties in the Township are currently in residential zoning districts. It is recommended that the Zoning Ordinance be revised to include an Institutional Zoning District that incorporates most of these properties and better reflects their actual use. It should be noted that the portion of Cheyney University in Thornbury Township, Delaware County, is in an Institutional Zoning District.
6. Agricultural Security District. Consider expanding the Agricultural Security District to include additional agricultural parcels.
7. Required Open Space. Update the Township's Zoning Ordinance to require developers to dedicate open space to the Township or pay a fee-in-lieu of dedication.

B. PLAN TO MEET HOUSING NEEDS

1. Variety of Housing Types. Thornbury Township provides a wide variety of both owner-occupied and rental housing units, and over sixty percent (60%) of this housing has been constructed since 1990. According to the 2000 Census data, the Township exceeds Chester County averages for rental units, thirty percent (30%) versus twenty-three percent (23%) for the county, and apartment units, twenty-three percent (23%) versus eighteen percent (18%) for the county. It is recommended that the Township continue policies to maintain this variety of housing opportunities.
2. Housing Needs. The residential build-out analysis prepared for this plan estimates that approximately 368 new dwelling units could be constructed in the Township under the provisions and requirements of the existing Zoning Ordinance. The Plan for Land Use also includes the recommendation that any revisions to the Zoning Ordinance should seek to maintain, but not increase, this build-out potential.
3. Special Needs Housing. The special needs housing and institutional services are currently provided in the Township at the Concept School for the learning disabled, Brian's House for the physically and mentally disabled and a private group home for children with special needs. The continued operation of these important facilities should be supported and accommodated by the Township. The Township should also consider accommodating some special needs housing within existing housing units by amending the Zoning Ordinance to allow these such uses in certain residential zoning districts.

C. TRANSPORTATION & CIRCULATION PLAN

The Circulation Map (Map 7B) shows the areas of the Township where the following recommendations concerning roadway improvements, trails, and scenic roads should be implemented.

1. Road Functional Classification. It is recommended that the road functional classification systems shown on the Circulation Plan Map be used to guide the maintenance and future improvements of this road system.
2. Scenic Roads. The rural character of the Township is, in part, defined by the local road network. Several roads are identified on the Circulation Plan and Future Land Use Plan maps as Scenic Roads. It is recommended that development within the viewsheds of these roads be limited, and that future road maintenance and improvements respect their scenic and rural qualities. The expansion of the cartways to allow increased traffic volumes can only reduce the current aesthetic appeal of these rural roads. It is also recommended that scenic road protection standards be adopted that are consistent with *Landscapes*.
3. Traffic Calming. Since most of the local road network services residential communities in the Township, traffic speed should be limited along these local roads for safety reasons and to limit noise. As a "traffic calming" measure, it is recommended that the cartways be kept narrow to hinder increased volumes and limit speeds.
4. Bicycle Routes. Recognize and accommodate bicycle routes along existing public roads through the Township. The Chester County Planning Commission has published a county-wide Bicycle Plan that utilizes existing public roads, and the Township Official Map identifies additional bicycle routes along existing roads. The County route map also identifies improvement needs to better accommodate bicycles along these roads. These routes should be examined and incorporated in the recommended Township-wide Bicycle and Trail Plan discussed below.
5. Bicycle Route Signage. Provide 'bike route' and 'share-the-road' signage along bike routes in the Township to educate local residents about the routes and that bicyclists and automobiles can safely co-exist on these roadways.
6. Township-wide Bicycle and Trail Plan. Prepare a Township-wide Bicycle and Trail Plan. This plan should explore the feasibility of providing an effective pedestrian circulation system in the Township that provides opportunities for destination walking, such as to parks and commercial areas, and for recreational walking and hiking. It should also incorporate the Bicycle Route recommendations discussed above. The Township Official Map identifies a trail network that has been partially implemented through the dedication of trail easements through the land development process and actual trail construction in Goose Creek Park. This Official Map should be updated as part of the Township-wide Trail Plan. Public participation should be a key component of the project.
7. Attractive Roadways. Thornbury Township should consider establishing a program similar to the PennDOT "ADOPT-A-HIGHWAY" program to promote regular trash pick-up programs along roadways and to build public support for the maintenance of attractive roadways.
8. Traffic Impact Study. Major subdivision and land development applications should include a Traffic Impact Study. The Traffic Impact Study should identify the amount of traffic expected to be generated by a development and how the traffic will be distributed over time to the surrounding roads. Traffic Impact Studies should also identify road improvements that would be needed to handle the increased traffic volumes. Based on this study, responsibility for implementation of needed improvements can be identified.

9. Public Transportation. Consider surveying residents about work destinations, desired access locations and their willingness to use public transportation if it was more convenient and available. Based on the results, be prepared to work with SEPTA to improve access, availability, and types of public transportation.
10. Roadway Improvements Program. Use the Roadway Inventory presented in Table 4-3 as a basis for maintaining and managing the Township road system.
11. U.S. Rt. 202 Corridor. The U.S. Rt. 202 corridor will be improved sometime in the next ten years. Work with PennDOT to (1) encourage the use of visual buffering and noise abatement from adjacent/nearby residential neighborhoods; (2) encourage a non-stop flow of U.S. Rt. 202 traffic through the Township; (3) discourage the use of Township residential roads as alternatives to U.S. Rt. 202, and (4) coordinate with area communities and PennDOT regarding detailed plans for the U.S. Rt. 202 improvement project.

D. PLAN FOR THE PROTECTION OF HISTORIC & NATURAL RESOURCES

The Historic, Scenic and Natural Resources Map (Map 7C) shows the areas of the Township where the following recommendations concerning riparian buffers, historic districts and scenic roads should be implemented.

1. Natural Resources
   a) Riparian buffer zones. The steam valleys and their associated floodplains, hydric soils, wetlands and woodlands constitute the Township's most significant natural environmental resources. While these areas are reasonably protected with existing Township ordinances and land development requirements, the Township should consider the recommendations in the Chester County Watersheds Plan regarding the establishment of riparian buffer zones to help protect and enhance the water quality of these streams. This would require a Zoning Ordinance amendment.
   b) Greenway Corridors. The wooded stream valleys form significant linear areas of undeveloped lands that should be considered for a Greenway Corridor Plan to accommodate trails and natural areas for the enjoyment of area residents. The corridor plan could include the detailed delineation of the corridor and conservation easement acquisition or dedication by the affected land owners to ensure its preservation and provide public access where needed to accommodate trails and access to the stream.
   c) Water Quality. Amend the stormwater management provisions of the Subdivision and Land Development Ordinance to include requirements for the protection of water quality and the promotion of infiltration through Best Management Practices.
2. Scenic and Historic Resources
   a) National Register Nominations. The existing inventory of historic resources should be updated to improve the level of documentation and to identify the more significant resources for nomination to the National Register of Historic Places.
   b) Historic Resources Map. The existing inventory of historic resources should be assembled, along with a historic resources map, and, with the property owner's permission, published as a booklet or brochure for distribution to residents of the Township.
   c) Historic Districts. The possibility of designating the following two historic districts should be considered:

i) Westtown Train Station Village: The cluster of historic properties in the vicinity of the Westtown Train Station.

ii) South Concord Road Historic Corridor: A linear district that encompasses the historic properties and landscapes along South Concord Road, which is also recommended to be designated a scenic road.

This project should include their designation as local and/or National Register historic districts. A local historic district would provide additional protection of the integrity of these areas through the establishment of an Historical and Architectural Review Board (HARB) to oversee future renovations, land development and the review of demolition permit applications. A National Register Historic District designation would provide protection from adverse impacts associated with federally funded projects, and also provide owners of income producing properties with historic tax credits for renovation expenses.

d) Historic Resources. Amend the Historic Preservation section of the Zoning Ordinance to allow additional alternative uses as an incentive to encourage their preservation.

e) Scenic Roads. The following roads should be designated scenic roads to help ensure the protection of the scenic qualities of these roadways and their associated landscapes.

i) Street Road (PA Rt. 926)

ii) South New Street

iii) Thornbury Road

iv) South Concord, section south of Westbourne Road to the township line.

v) Westtown-Thornton Road

vi) Dilworthtown Road

vii) South Westtown Road

viii) Cheyney Road

Guidelines and design standards should be provided for viewshed protection along these roads, such as by incorporating buffer and screening standards.

E. COMMUNITY AND WATER FACILITIES PLAN

The Community and Water Facilities Plan Map (Map 7D) shows the areas of the Township where the following recommendations concerning public services should be implemented.

1. Community Facilities

   The Township owned one (1) acre parcel in the Westtown Train Station Village area should be developed for a Township building and community center. This would allow the Township to have their offices within the Township and would support the improvement of the Westtown Train Station Village as an important historic community center.

2. Police Services

   Police services are praised by residents, but there has been some recent concern regarding the escalating cost of these services and the lack of a long term police service strategy. Consider alternatives to contracting for police services.

3. Fire and Ambulance Services

a) The Township should continue its support for the West Chester and Concordville Fire Companies in their efforts to provide this service.

b) The Township should continue its voluntary support of the Chester County Regional Emergency Services Council.

4. Infrastructure and Township Services

a) Water Supply and Sanitary Sewer Service

i) As documented in the Township's "Act 537" Sewage Facilities Plan, existing problems with on-site septic systems in the Thornbury Estates community will need to be addressed with the provision of public sewer and water service.

ii) The Thornbury Estates community should be provided with public water service since residents of this community are experiencing considerable problems with their wells. Since areas of the Township adjacent to these areas are already developed, the expansion of these service areas will not serve to accommodate additional land development.

iii) All lawful activities that may impact the Township's water supply, such as the extraction of minerals and commercial agriculture production, should be carefully evaluated to ensure that these activities do not adversely affect water quality or supply.

b) Road Maintenance and Snow Removal

A facility should be constructed for the storage of winter road salt.

c) Storm Water Management

i) Solutions to flooding problems in Westtown Train Station Village area, and internal drainage problems in the Deer Pointe development should be investigated.

ii) The stormwater management ordinance should be revised to require enhanced groundwater recharge and stormwater quality standards and to promote infiltration using Best Management Practicies.

iii) Consider the adoption of the CCWRA's model Stormwater Management Ordinance either as a supplement to the Subdivision and Land Development Ordinance or as a stand alone ordinance.

d) Solid Waste and Recycling

i) The Township should investigate possible cost savings and better service for residents by providing trash and recycling collection service. Rather than adding employees and purchasing equipment, the Township should contract with private haulers to provide this service.

ii) The Township should investigate providing a leaf collection service as an alternative to permitting leaf burning, which is a fire hazard and creates considerable smoke and air pollution.

iii) The Township should develop a Township-wide Solid Waste Management Plan.

5. Parks And Recreation

Park "Master Plans" should be prepared for all Township parks.

F. INTERRELATIONSHIP OF PLAN ELEMENTS

The individual plan elements required by the MPC interrelate to comprise the Comprehensive Plan for the Township. This section discusses these interrelationships and how they affected plan recommendations.

Chapter 1 of the plan sets forth the goals and objectives formed by the Township and includes Township history and MPC requirements for the preparation of a Comprehensive Plan. Methods to effectively implement the objectives and meet the goals were considered throughout the preparation of this plan and are directly addressed through the implementation schedule set forth in Chapter 8.
The second chapter of the Plan set forth Census data, and provides population and housing projections to 2020. The chapter also discussed current employment and housing characteristics in the Township. Ways to accommodate anticipated population increases and housing demands without compromising the Township's rural landscapes were discussed throughout the plan. Specifically, Chapter 3, Existing Land Use and Zoning, includes a residential build-out analysis which estimates the number of new housing units that could be built in the Township given available land and current zoning ordinance standards.

Chapter 3 relates to housing issues discussed in Chapter 2, as well as Chapter 6, Community Facilities and Services, wherein the new municipal facility and parks are discussed.

Chapter 4, Transportation and Circulation, discusses the road network serving the Township, and includes a major roadway needs analysis and road inventory. The major roadway needs analysis relates to Chapter 6, Community Facilities and Services, in that it indicates existing roads which require improvement. The road inventory also relates to Chapter 6 in that it indicates Township roads that are slated for future trail development.

Environmental, Cultural and Historic Resources, Chapter 5, identifies scenic roadways and how they may be protected in the future through Township ordinances. Chapter 4 Transportation and Circulation, identifies current roads which have been identified as scenic and provides recommendations for improvement of these roadways. Chapter 5 also identifies land in the Township that may be appropriate for acquisition for use as open space.

G. STATEMENT OF DEVELOPMENT COMPATIBILITY WITH CONTIGUOUS MUNICIPALITIES

Issues and opportunities involving adjacent communities are discussed and analyzed throughout the plan. The populations of adjacent townships and projections for those townships are discussed in Chapter 2.

As noted in Chapter 3, Existing Land Use and Zoning, the adjacent municipalities of Westtown Township and Birmingham Township, Chester County, and Thornbury Township, Delaware County, all have generally compatible zoning along the borders of Thornbury Township, Chester County. The only area of inconsistency is at Cheyney University, where Thornbury Township, Delaware County has zoned the university land Institutional, and Thornbury Township, Chester County has zoned the land Low Density Residential, with Institutional uses permitted by Special Exception. As noted in "A. Plan for Land Use" above, it is recommended that Thornbury Township, Chester County revise its Zoning Ordinance to include an Institutional Zoning District that incorporates most of the Cheyney University properties and better reflects their actual use.

Chapter 4, Transportation and Circulation, discusses transit facilities in the region that serve the Township. The area roadway network is discussed which includes descriptions of arterial roadways which serve the region. Chapter 5, Environmental, Cultural and Historic Resources, includes discussions of natural resources which are not delineated by municipal boundaries. These resources include watersheds which are divided by topography and affect the drainage of stormwater in municipalities based on slope. Streams also transcend municipal boundaries; downstream townships are affected by the land development standards and practices of upstream neighbors.

Chapter 6, Community Facilities and Services includes a discussion of services such as police and fire, which serve more than just Thornbury Township. Additionally, the municipal offices are currently located in Delaware County.

H. RELATIONSHIP TO REGIONAL AND COUNTY PLANS AND TRENDS

The MPC requires that municipal comprehensive plans be somewhat consistent with county comprehensive plans. This plan has been funded in part through the County's Vision Partnership Program, which requires that comprehensive plans be consistent with the *Landscapes,* the County's policy plan, of which *Watersheds* and *Linking Landscapes* are elements. Accordingly, this plan has been prepared to achieve Township goals by utilizing County planning standards and techniques as set forth in *Landscapes*, *Watersheds* and *Linking Landscapes,* and other county policy planing documents, such as the Bicycle Plan. County planning documents are referenced throughout the Township Comprehensive plan, where appropriate, either to describe existing county policy or within recommendations and implementation strategies.

8. SHORT & LONG RANGE IMPLEMENTATION STRATEGIES

Table 8-1 sets forth individual tasks and action items to be implemented pursuant to the recommendations set forth in Sections A. through E., in the preceding chapter. The implementation tasks are ranked according to priority, include a completion time frame, the party or parties responsible for the facilitation of implementation, and type of action needed. A category has also been provided which indicates what type of action is required, such as an ordinance amendment, capital project or a special project. Time frame categories include: Immediate - within 6 months; Short-term - within 1 year; Medium-term - between 1 & 3 years; Long-term - longer than 3 years. The time horizon for this plan is ten years, all implementation strategies should be completed prior to that time, as set forth below. The plan should be reviewed again, according to MPC requirements in 2014.

Table 8-1: Implementation Strategies

#	CH.	RECOMMENDATION	PRIORITY	TIME FRAME FOR COMPLETION	RESPONSIBILITY	METHOD OF IMPLEMENTATION
A. GENERAL RECOMMENDATIONS						
1	All	Establish a formal, annual review of Plan Implementation, which notes progress made to date, and sets priorities on actions to be completed.	High	On-going	Planning Commission, Board of Supervisors	Special projects and ordinance amendments
2	All	Review comprehensive plan every three years to keep it current with natural and environmental changes.	Medium	On-going	Planning Commission, Board of Supervisors	Review and update
B. PLAN FOR LAND USE						
3	2, 3	Continue the current Township land use pattern.	High	Immediate	Planning Commission, Board of Supervisors	
4	3	Revise the Zoning Ordinance to: (1) preserve natural, scenic, & historic resources (2) enhance pedestrian scale, character and historic quality in the area of Westtown Station Village and (3) preserve open space along the Waln Run and Goose Creek stream valleys.	High	Immediate	Planning Commission, Board of Supervisors	Zoning Ordinance
5	3	Amend the Zoning Ordinance and map to include an Institutional Zoning District.	High	Immediate	Planning Commission, Board of Supervisors	Zoning Ordinance
6	3	Consider expansion of the Agricultural Security District.	Medium	Short-term	Planning Commission, Board of Supervisors	Special project
7	3	Amend the Zoning Ordinance to require open space dedication or a fee-in-lieu of dedication for new land developments.	High	Short-term	Planning Commission, Board of Supervisors	Zoning Ordinance and Development Plan Review process

C. PLAN TO MEET HOUSING NEEDS						
8	3	Maintain the build out potential of the Zoning Ordinance.	Low	On-going	Planning Commission, Board of Supervisors	Zoning Ordinance
9	3	The Township should also consider accommodating some special needs housing within existing housing units by amending the Zoning Ordinance to allow these such uses in certain residential zoning districts.	Low	Long-term	Planning Commission, Board of Supervisors	Zoning Ordinance
D. CIRCULATION PLAN						
10	4	Utilize the functional road classifications shown on the Circulation Plan Map to guide future road improvements.	Medium	On-going	Board of Supervisors, Township Engineer, Project Consultants	Adoption of Comprehensive Plan
11	4	Avoid the widening of designated scenic roads.	High	On-going	Board of Supervisors, Township Engineer, Project Consultants	Official Map
12	4	Avoid widening residential roads throughout the Township.	Medium	On-going	Board of Supervisors, Township Engineer, Project Consultants	Official Map
13	4	Using the Township Official Map and the Chester County Bicycle Plan, prepare a Township-wide Bicycle and Trail Plan to provide walking and bicycle trails and lanes throughout the Township.	High	Short-term	Planning Commission, Board of Supervisors, Consultant	Special Project
14	4	Provide 'bike route' and 'share-the-road' signage along Township bike routes to educate local residents about the routes so that bicyclists and automobiles can safely co-exist on these roadways.	High	Short-term	Planning Commission, Board of Supervisors, Consultant	Special Project
15	4	Continue documentation of traffic improvement concerns to PennDOT for listing on the 12-year program and the TIP.	High	On-going	Board of Supervisors, Township Engineer	Special Project
16	4	Require Traffic Impact Studies to be prepared for major subdivision and land development projects.	High	Immediate	Board of Supervisors, Planning Commission, Township Engineer	Subdivision and Land Development Ordinance; Development Plan Review and Approval Process
17	4	Consider establishing a Township-level roadway cleanup program similar to PennDOT's Adopt-A-Highway Program.	Low	Long-term	Board of Supervisors	Special Committee
18	4	Consider surveying residents regarding the need for public transportation and if there is a need, work with SEPTA to accommodate the need.	Medium	Medium-term	Board of Supervisors, SEPTA	Special Committee/ Special Project

19	4	Use the Roadway Inventory presented in Table 4-3 as a basis for maintaining and managing the Township road system.	High	Immediate	Board of Supervisors and hired contractors	Capital Projects
D. PLAN FOR THE PROTECTION OF HISTORIC & NATURAL RESOURCES						
20	5	Consider amending the Zoning Ordinance to reflect the recommendations of *Watersheds* to create riparian buffer zones along Township streams.	High	Short-term	Planning Commission, Board of Supervisors	Zoning Ordinance
21	5	Prepare a Greenway Corridor Plan to delineate greenway areas throughout the Township.	Medium	Short-term	Planning Commission, Board of Supervisors	Special Project
22	5, 6	Amend the stormwater management provision of the Subdivision and Land Development Ordinance to include requirements for the protection of water quality and to promote infiltration using BMP's and consider adopting the CCWRA's model SWM ordinance.	High	Short-term	Planning Commission, Board of Supervisors	Subdivision and Land Development Ordinance and/or new Storm Water Management Ordinance.
23	5	Consider the creation of a historic zoning district to contain the properties near Westtown Train Station and those in the area of south South Concord Road.	Medium	Medium-term	Planning Commission, Board of Supervisors	Historic District and Map Amendment
24	5	Amend the Historic Preservation section of the Zoning Ordinance to allow additional alternative uses as an incentive to encourage their preservation.	Medium	Medium-term	Planning Commission, Board of Supervisors	Historic Preservation Ordinance Amendment
25	5	Update the existing historic resource inventory to improve documentation and identify resources for the National Register of Historic Places.	Medium	Short-term	Historical Commission, Board of Supervisors	Special Project
26	5	Prepare a brochure and map of historic resources for Township residents.	Low	Long-term	Historical Commission, Consultant	Special Project
27	5	Amend the Subdivision and Land Development Ordinance to provide guidelines for buffering and landscaping along scenic roads.	Medium	Short-term	Board of Supervisors, Planning Commission	Subdivision and Land Development Ordinance
28	5	Designate Scenic Roads and adopt scenic roads protection standards consistent with *Landscapes Plan* Scenic Resources Objective.	Medium	Short-term	Board of Supervisors, Planning Commission, Consultant	Zoning Ordinance, Subdivision and Land Development Ordinance, Road maintenance policy

E. COMMUNITY AND WATER FACILITIES PLAN						
29	6	The Township should continue to support the West Chester and Concordville Fire Companies and the Chester County Regional Emergency Services Council.	High	On-going	Board of Supervisors	Budget Item
30	6	Resolve on-site water and sewer problems by providing public water and sewer service.	High	Short-term	Board of Supervisors, Township Engineer	Special Infrastructure Projects
31	6	Construct a road salt storage facility.	High	Short-term	Board of Supervisors, Township Engineer	Special Project
32	6	Investigate stormwater flooding problems in the Westtown Train Station Village Area and Deer Pointe.	High	Short-term	Board of Supervisors, Township Engineer	Special Project
33	6	Consider the development of the Township-owned 1acre parcel in the Westtown Train Station Village as the Township building and community center.	Low	Long-term	Planning Commission, Board of Supervisors, Township Engineer, Consultant	Special Project
34	6	Consider alternatives to the establishment of a Township or regional police department.	High	On-going	Board of Supervisors	Resolution
35	6	Investigate providing trash and recycling collection service through a private hauler.	Medium	Medium-term	Board of Supervisors	Resolution
36	6	Consider providing leaf collection service.	Medium	Medium-term	Board of Supervisors	Resolution
37	6	Develop a Township-wide Solid Waste Management Plan consistent with *Landscapes* solid waste management objective.	Medium	Medium-term	Board of Supervisors	Special Project

APPENDICES

A: Public Participation Process

B: Build Out Analysis Methodology

C: Definitions

D: Acronyms

APPENDIX A - PUBLIC PARTICIPATION PROCESS

The Plan update process was initiated with a series of public meetings targeted to three (3) specific areas with similar geographic characteristics to allow residents to express their vision for the future of the Township. In addition to these meetings, input was also obtained from a citizen survey distributed in the Township newsletter and posted on the Township web site. Personal interviews with interested residents and Township officials were also conducted.

This process served to both inform the community of the Plan project and provide insight regarding community opinions about the quality of life in the Township and residents' concerns about future growth and development.

Public involvement has been an essential and integral part of the development, interpretation and implementation of the Plan. Of primary concern was the conservation of existing Township open space and the preservation of historic and natural resources while providing for the health, safety, and welfare of Township residents.

NEIGHBORHOOD MEETINGS COMMENTS SUMMARY

The following is a list of comments discussed at the three neighborhood meetings held as part of the public participation component of the visioning process. The comments are organized according to the agenda topics used to conduct the meetings.

The meetings were conducted on the following dates:

- October 3, 2002 -- West Thornbury *(west of Rt. 202)*
- October 10, 2002 -- North Thornbury *(north of Waln Run, west of Westtown-Thornton Rd.)*
- October 24, 2002 -- South Thornbury (south of Waln Run, east of Westtown-Thornton Rd.)

PUBLIC FACILITIES & SERVICES

Emergency Services (Police, Fire, Ambulance)

- Local police response time and service is excellent.
- The Township had prepared a police survey.
- Regarding the contracting of other Township Police Departments State Police, it was felt that State Police would be less expensive, but that response time would not be nearly as good and they would not be as familiar with the neighborhoods.
- The cost for police service is high in relationship to the total Township budget.

Fire protection - The east end of township is served by Concordville Fire Company (Tanguy and Cheyney), the remainder is served by West Chester.

- Brandywine at Thornbury townhomes -- Fire trucks cannot get through narrow roadways within development.
- Ambulance service is provided by Goodwill out of West Chester. No complaints about service.

Library - Service is available and adequate at the following area libraries:

- Cheyney University - Investigate access to this library by the general public.
- West Chester University
- West Chester Borough Library

Recreation - Parks, Trails, Bikeways, Youth/Adult Programs

- Goose Creek Park – Excellent park. There is a need for more trails and a connection to the soccer fields.
- Soccer Fields – These are maintained and run by and for the exclusive use of the West Chester Soccer Association. The general public should have access to these or other similar field sport facilities.
- Thornbury Township (DELCO) -- Park has more stuff for kids.
- Brandywine townhomes – The athletic fields in the northeast corner have never been developed.
- Some felt that there should be more trails in the Township, including:
  - A connection to Spackman land, although there does not appear to be any provisions for trails on this property.
  - Brandywine at Thornbury Home Owners Association trails are very popular, but are not open to the general public.
  - Need a way to safely cross Rt. 202 near the Rt. 926 intersection.
  - Trail connectivity needed to:
    (1) schools, including new West Chester school proposed in Westtown Township.
    (2) Goose Creek Park (township)
    (3) Commons of Thornbury and Westtown Village shopping centers, from nearby developments.

Sewer & Water Service

- There is mostly on site sewer throughout theTownship.
- Brandywine at Thornbury sewer system has been acquired from the Home Owners Association by Philadelphia Suburban Water Company (PSW).
- Most of Penn Oaks is on PSW public water service.
- Most failures of older septic systems are in Thornbury Estates (southeast of Rts. 202 and 926). Small lot sizes do not leave room for second systems. Some houses sold here in the last four (4) years have needed sand or peat mounds. PSW wants 80% of the 104 homes to sign up for public water. Cost is $2,800 per house plus an additional $1,200 to $1,500 to hookup and abandon existing well. Public sewer is estimated to cost from $12,000 to $15,000 per unit.

Trash Collection

- All Township homeowners or HOAs individually contract for trash collection.
- Some residents expressed an interest in Christmas tree and leaf recycling. The Township currently permits leaf burning. Leaf collection should be considered.

- Although not required to recycle, the Township is one of 3 or 4 in Chester County that have received awards from PA Department of Environmental Protection (DEP) for recycling. Since private collectors currently charge $45 to $50 per quarter just for recycling, the Township should investigate providing trash collection and recycling service. It was felt the Township could negotiate a better deal.

NEIGHBORHOODS / COMMUNITY LIFE

Significant Features / Attractions

Brandywine at Thornbury residents:

- Wooded areas / open space.
- Pool and recreation facilities.
- Sidewalks and trails.
- Access to Rt. 202 shopping centers.

Thornbury Estates residents:

- Size of lots ("neighbors not on top of you").

Penn Oaks residents:

- Secluded.

Historic Westtown Village residents:

- Tight community.
- Old homes.

Opportunities and Needs

- More trails, particularly with connections to shopping centers, schools and parks.
- Noise abatement from Rt. 202:
  - Penn Oaks.
  - Thornbury Estates.
  - Brandywine at Thornbury.
- Stormwater problems
  - Westtown Village -- frequent flooding.
  - Deer Pointe -- homes along center drainage swale.

ENVIRONMENTAL RESOURCES

Historic / Cultural

- Battlefield District Preservation is important.
- Westtown Village (Westtown-Thornton Road / Rt. 926) is the only historic neighborhood in the Township.
- Existing historic inventory from 1980 just includes houses. Needs to be improved and include other structures.

Scenic Roads

The following should be considered as scenic roads:

- Cheyney Road.
- South Concord Road.
- New Street.
- Westtown-Thornton Road (state road).
- Thornbury Road.
- Westtown Road (state road).

U.S. RT. 202 CORRIDOR

- Rt. 202 widening project details are currently unknown. The project is likely to start at least 10 years from now. All would like more information on the project.
- A landscaped buffer along the west side of Rt. 202 should be maintained.
- Rt. 202 creates considerable noise for Thornbury Estates, Brandywine at Thornbury, Penn Oaks and The Greens at Penn Oaks residents.

COMMUNITY SURVEY

The following survey was mailed to all 1,100 households in the Township and was also posted on the Township's web site. A total of sixty-two (62) households responded, which is a response rate of only 5.6%.

The results of this survey are tabulated on a copy of the questionnaire on the following page.

Respondents

The sixty-two (62) households reported a total of 160 people in their households, for an average household size of 2.58, which is essentially the same as the average household size of 2.60 reported for Thornbury Township in the 2000 Census. The largest age-groups represented were ages 0-9 (20%), 30-49 (29%), and 50-64 (24%). Sixty-four percent (64%) of the households had lived in the Township 10 years or less, while 36% lived in the Township for more than 10 years. The largest group of households - 39% - had lived in the Township for 4 to 10 years.

Responses

The each household was asked to rank from 1 to 5 what features they liked about Thornbury Township, and what improvements were needed, with 5 being the highest.

Township Features

Features most liked, with an average score above 4, include:

- police services,
- seclusion / privacy,
- scenic natural landscapes, and
- historic architecture / setting.

Features ranked just below these, with an average score of 3 to 4, include:

- road maintenance,
- neighbors nearby,
- parks & playgrounds,
- trails / paths, and
- suburban neighborhoods.

Improvement Needs

Only one improvement need received a score of 4 or higher:

- *open space preservation* (average score of 4.4)

Improvement needs with an average score of 3 to 4 include:

- better traffic circulation / less congestion,
- more public parks / recreation opportunities,
- more opportunities for walking / biking, and
- more police protection.

Additional Questions

The questionnaire included three questions to provide respondents an opportunity to state their views. Their responses are summarized as follows:

A. What do you like most about living in Thornbury Township? - Most prevalent responses: "Open space, scenic, rural atmosphere, convenient access to surrounding areas."

B. What do you like least about living in Thornbury Township? - "Traffic, speeding, car dealerships." - Expressed by almost 100% of those responding to the question.

C. What do you think will be the most significant problem Thornbury Township will face in the next five years? - "Traffic and increased commercial / residential growth." - Expressed by almost 100% of those responding to the question.

Thornbury Township (Chester County) Comprehensive Plan Update
Community Questionnaire

Please take a few minutes to complete this questionnaire. As part of Chester County's Landscapes program, Thornbury Township is updating its Comprehensive Plan. The Comprehensive Plan will establish both land use planning / zoning and public services / facilities policies to direct and guide future development in the township. Your responses will assist us in developing the goals and objectives for this planning effort.

I. Name / street where you live: **62 responses**
name street address

II. Number of people in your household by age group: **32** 0-9 (20%) **17** 10-19 (11%) **6** 20-29 (4%) **46** 30-49 (29%) **38** 50-64 (24%) **21** 65+ (13%)

III. How long have you lived in Thornbury Township? **15** 0-3 yrs. (25%) **24** 4-10 yrs. (39%) **7** 11-20 yrs. (11%) **15** 20+ yrs. (25%)

Please rank the importance of the following items by circling the appropriate number.

IV. Significant features of Thornbury Township

		Importance 1 Less	2	3	4	5 More	Avg.
1. Public services							
a) Police	97%	2 3%	2 3%	12 19%	16 26%	28 45%	**4.0**
b) Road Maintenance	95%	0 0%	2 3%	14 23%	22 35%	21 34%	**3.9**
c) Recreation	95%	12 19%	12 19%	22 35%	9 15%	4 6%	**2.5**
d) Trash Collection	92%	9 15%	10 16%	15 24%	17 27%	6 10%	**2.8**
2. Community features							
a) Neighbors nearby	97%	5 8%	13 21%	22 35%	12 19%	8 13%	**3.0**
b) Variety of housing types	95%	14 23%	7 11%	18 29%	13 21%	7 11%	**2.7**
c) Rt. 202 retail services	92%	15 24%	9 15%	15 24%	14 23%	4 6%	**2.5**
d) Seclusion / privacy	97%	3 5%	2 3%	7 11%	13 21%	35 56%	**4.1**
e) Access to nearby urban centers	95%	7 11%	10 16%	20 32%	15 24%	7 11%	**2.9**
3. Recreation opportunities							
a) Parks & playgrounds	97%	8 13%	12 19%	11 18%	19 31%	10 16%	**3.1**
b) Youth athletic programs	94%	9 15%	11 18%	21 34%	13 21%	4 6%	**2.7**
c) Senior programs	98%	15 24%	14 23%	24 39%	6 10%	2 3%	**2.4**
d) Trails/paths	98%	7 11%	8 13%	14 23%	12 19%	20 32%	**3.4**
e) Bicycling	94%	11 18%	11 18%	13 21%	9 15%	14 23%	**2.9**
4. Environmental features							
a) Scenic natural landscapes	97%	1 2%	0 0%	3 5%	14 23%	42 68%	**4.5**
b) Historic architecture / settings	100%	3 5%	3 5%	12 19%	15 24%	29 47%	**4.0**
c) Suburban neighborhoods	92%	9 15%	6 10%	12 19%	18 29%	12 19%	**3.0**

V. Improvement needs in Thornbury Township

		Importance 1 Less	2	3	4	5 More	Avg.
1. Better traffic circulation / less congestion	94%	2 3%	4 6%	9 15%	10 16%	33 53%	**3.9**
2. Open space preservation	94%	0 0%	0 0%	4 6%	8 13%	46 74%	**4.4**
3. More housing opportunities:							
a) Affordable housing	94%	25 40%	9 15%	17 27%	6 10%	1 2%	**2.0**
b) Variety of housing types	94%	17 27%	11 18%	16 26%	8 13%	6 10%	**2.4**
4. Rt. 202 Business District / Commercial Services							
a) More opportunities for dining out	94%	18 29%	13 21%	13 21%	10 16%	4 6%	**2.3**
b) More / better variety of shops	98%	19 31%	15 24%	17 27%	6 10%	4 6%	**2.3**
c) More parking	81%	19 31%	17 27%	9 15%	4 6%	1 2%	**1.6**
d) Special events	100%	22 35%	13 21%	14 23%	9 15%	4 6%	**2.4**
e) Improving the streetscape / lighting	95%	16 26%	9 15%	15 24%	13 21%	6 10%	**2.6**
f) Increasing the size of the business district	89%	31 50%	7 11%	15 24%	2 3%	0 0%	**1.6**
5. More public parks / recreation opportunities	97%	8 13%	8 13%	14 23%	17 27%	13 21%	**3.2**
6. More opportunities for walking / biking	98%	3 5%	8 13%	10 16%	14 23%	26 42%	**3.8**
7. More police protection	94%	2 3%	4 6%	18 29%	22 35%	12 19%	**3.4**
8. Road maintenance and snow removal services	94%	0 0%	2 3%	17 27%	25 40%	14 23%	**3.6**

Additional questions.

A. What do you like most about living in Thornbury Township?
Open space, scenic, rural atmosphere, convenient access to surrounding areas - most prevalent responses.

B. What do you like least about living in Thornbury Township?
Traffic, speeding, car dealerships were overwhelming concerns - expressed by almost 100% of those responding to question.

C. What do you think will be the most significant problem Thornbury Township will face in the next five years?
Traffic and increased commercial / residential growth - expressed by almost 100% of those responding to question.

RETURN OR MAIL TO THE TOWNSHIP BUILDING AT: THORNBURY TOWNSHIP, 8 TOWNSHIP DRIVE; CHEYNEY, PA 19319

Prepared by RAYOTT & ASSOCIATES - Planning and Landscape Architecture - 17 South Church Street - West Chester, PA 19382 November 19, 2002

APPENDIX B - BUILD OUT ANALYSIS

The residential build out analysis prepared for this report utilized the Chester County Land Records geographic information system (GIS) map data for Thornbury Township and the associated Chester County Tax Assessment file for all tax parcels in the Township. In addition to the tax parcel information, the Chester County Land Records map data also includes the U.S. Soil Conservation Service Soil Survey, Federal Emergency Management Agency (FEMA) maps of the 100 year flood plain, topographic data at five-foot contour intervals, aerial photography taken in 2000 and the National Wetland Inventory maps.

METHODOLOGY

The build out analysis was prepared to estimate the number of new dwelling units that could be constructed in the Township according to the provisions of the existing Zoning Ordinance, as amended through June, 2003. One exception to this rule was that the analysis incorporated a pending proposal of the Township Planning Commission to change the minimum qualifying tract size for utilizing the "Cluster Development Option" from 10 to 25 acres. The current Township Zoning Map was then digitized and added to this base map data.

Developable Area

The GIS system software (ArcView) was used to produce a database file that includes the total area of each tax parcel in the Township, along with the net areas of flood plain, wetlands and hydric soils in each parcel. Each of the environmental features were grouped as one map unit overlay to avoid double counting when these feature occupy the same space -- such as for floodplains and hydric soils.

This data, along with a code for the Zoning District, was imported to a spreadsheet for further analysis. The spreadsheet was then used to calculate a "net developable area" for each parcel by subtracting the environmental features mentioned above from the total area of each parcel.

Developable Area Adjustment

The net developable area of each lot was further reduced by 15% to account for future road rights-of-way and site geometric limitations.

Zoning and Estimated Lot Yield

The zoned residential density was tabulated as minimum lot size in square feet and divided into the adjusted developable area to calculate the number of lots that could be developed on each tax parcel. This number was then reduced by the number of dwelling units that currently exist on the parcel. The final calculation was then used as an estimate of the number of residential lots that could be added to each tax parcel.

Final Map Analysis

The lot yield data was then imported to the GIS map database in order to plot a map of all developable parcels in the Township. This map was examined to discover possible data errors or unique lot configurations that could prevent the lot's development as predicted in the spreadsheet analysis. With these final corrections and adjustments, a final future development lot yield was then compiled for each tax parcel. The results of this analysis are included as Table 3-2 and illustrated on Map 3C of this plan.

APPENDIX C: DEFINITIONS

1. Floodplains:

The level areas next to streams which are at risk of flooding during major storms. The Federal Emergency Management Agency's 100-year floodplain is determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur.

2. Prime Agricultural Soils:

Soil types that are fertile and considered productive for agriculture. They consist of capability Classes I, II, and III soils, as classified by USDA Soil Conservation Service Soil Survey. Capability classification is a grouping of soils that shows generally how suitable they are for most kinds of farming. Class I is the best suited soils types for crop growing and have the fewest limitations. Class II and III soils have some limitations which reduce the choice of plants that can be successfully grown in them and may also require special conservation practices.

3. Stream headwaters:

The uppermost tributaries of a stream or river, which are known as "first order streams.

4. Stream valleys:

Those areas containing stream channels (including creeks, streams and rivers) and their associated banks which may contain slopes and wooded areas.

5. Watersheds:

An area of land that drains into a particular river or body of water; usually divided by topography or ridgelines. (Also the title of Chester County's water resources plan).

6. Wetlands:

Low-lying areas inundated by water at a frequency and duration sufficient to support wetland vegetation (e.g. wetlands include such areas as swamps, marshes and wet meadows).

APPENDIX D: ACRONYMS and ABBREVIATIONS

1. A: Agriculture
2. ADT: Average Daily Traffic
3. Avg.: Average
4. BOS: Board of Supervisors
5. CCPC: Chester County Planning Commission
6. CCWRA: Chester County Water Resources Authority
7. Delco: Delaware County
8. DRBC: Delaware River Basin Commission
9. DUI: Driving Under the Influence
10. DVRPC: Delaware Valley Regional Planning Commission
11. Exceptional Value
12. FEMA: Federal Emergency Management Agency
13. GIS: Geographic Information System
14. GWPA: Ground Water Protection Area
15. HOA: Homeowners Association
16. HUD: U.S. Department of Housing and Urban Development
17. HQ: High Quality
18. MH: Mobile Home
19. MPC: Pennsylvania Municipalities Planning Code
20. MSA: Metropolitan Statistical Area
21. NHL: National Historic Landmark
22. NR: National Register of Historic Places
23. OMB: Office of Management and Budget
24. PA-DEP: Pennsylvania Department of Environmental Protection
25. PennDOT: Pennsylvania Department of Transportation
26. Plan: Thornbury Township Comprehensive Plan
27. PRD: Planned Residential Development
28. SALDO: Subdivision and Land Development Ordinance
29. SEPTA: Southeast Pennsylvania Transportation Authority
30. SF: Square feet
31. SWM: Stormwater Management
32. Township, Twp: Thornbury Township
33. USDA: U.S. Department of Agriculture
34. WEGO: Westtown-East Goshen Township Police Department
35. 30/38: HUD guidelines: monthly housing costs-30% household income and total long term debt payments-38% household income