

CHAPTER 10 TRANSPORTATION

Thornbury Township has an extensive road network serving its residences, businesses, and institutions. These roads are of varying categories, from major arterials to local secondary roads. **Figure 10.1** illustrates the geographic distribution of the road network. The extensiveness of the road network is generally reflective of the Township development pattern and its location regionally within surrounding employment and commercial destinations. Conversely, Thornbury Township contains institutional destinations which generate traffic on local roads.

Transportation issues in the Township involve the road network and vehicles that use it, including private vehicles, public transit and commercial vehicles. There are also opportunities for non-road routes, such as trails and paths available to pedestrians, cyclists and equestrians. Together, these networks make up the Township's basic transportation infrastructure for the future.

Regional Transportation Pattern

Thornbury Township is situated between a network of regional roads that carry significant volumes of traffic on a daily basis. U.S. Route 202 (Wilmington-West Chester Pike) is contiguous to the southwest corner to the Township. This major arterial is accessed most directly by Dilworthtown Road. U.S. Route 1 is also close to the Township, although not physically located within it. In this area, U.S. Route 1 (Baltimore Pike) is oriented east-west and passes through the adjacent Concord Township to the south. State Route 352 (Middletown Road) passes through the northeast corner of Thornbury Township, linking State Route 926 (State Road) and U.S. Route 1. State Route 926, forming part of the northern Township boundary, is an east-west oriented roadway which connects areas to the west in Chester County to Route 3 immediately north of Edgmont Township. The nearest Interstate Highway is Interstate 476 (The Blue Route) located east of the Township and intersecting U.S. Route 1 east of Media. With the minor exception of Routes 352 and 926, each of these regional major roads lies outside the boundaries of Thornbury Township, but provides close access to the region and beyond.

Existing Conditions

The road network within the boundaries of the Township include five (5) roads of lower classification than those noted above. Figure 10.1 differentiates the

internal roads by classifications established by PennDOT, from minor arterials, such as Cheyney Road and portions of Dilworthtown and Glen Mills Roads, to collector roads, such as Creek and Glen Mills Roads east of Cheyney Road. Local primary roads are of lower classification and are represented by Locksley and Springlawn Roads. The majority of roads in the Township, however, are local secondary roads, primarily serving individual developments or limited traffic.

The volume of traffic that individual roads carry is measured in a variety of ways, including periodic counting by regional transportation agencies and specific traffic impact studies for proposed land development. The accepted unit of measurement is referred to as AADT, or average annual daily traffic. This is a unit that reflects actual counts of traffic at an intersection or a road segment. The number is then adjusted to account for variables such as day of the week, time of the year, or other specific factors like detours that might affect any given count. The Delaware Valley Regional Planning Commission (DVRPC) is the local Metropolitan Planning Organization (MPO) serving southeast Pennsylvania and adjacent New Jersey. DVRPC assembles and distributes traffic data for all of its member counties, including Delaware County. Table 10.1, which follows on the next page, is the currently available list of traffic counts for roads in Thornbury Township, measured between the years 1997 and 2002. Data older than this, although interesting for historical growth, is not included and is generally not reflective of the current condition.

Table 10.1

Thornbury Township Road Segment Traffic Counts				
Road Name	From	To	Date	AADT
Springlawn	Cheyney	Glen Mills	1997	6096
Dilworthtown	Chester County Line	Clayburgh	1997	384
Creek	Grist Mill	Locksley	1997	1524
Dilworthtown	Westtown	Dilworthtown	1997	1058
Dilworthtown	Wilmington Pike	Chadds Cove	1997	3569
Glen Mills	Long Lane	Stoney Bank	1997	1731
Glen Mills	Yellow House Lane	Thornton	1997	2853
Gradyville	Cottage Lane	Old Gradyville	1997	818
Springlawn	Cheyney	3500 ft. east	1997	192
Westtown-Thornton	Echo Hill	Rt. 926	1998	1373
Cheyney-Thornton	Tanguay	Rt. 926	1998	2498
Creek	Chester County Line	Cheyney	1998	1503
Stoney Bank	Stony Hill Lane	Forge	1998	2800
Glen Mills	Stoney Bank	Creek	1998	5739
Cheyney	Glen Mills	Locksley	1998	3596
Concord	Dilworthtown	Chester County Line	1998	766
Westtown	Concord	Dilworthtown	1998	864
Glen Mills	Brinton Lake	Westtown	1998	1343
Forge	Stoney Bank	Steven Drive	1999	1061
Locksley	Creek	Rose Lane	1999	1586
Glen Mills	Springlawn	Stoney Bank	1999	2782
Westtown	Nice	Glen Mills	1999	2895
Street (Rt. 926)	Shady Grove Way	Penns Grant Drive	2000	11,286
Creek	Sweetwater	Gradyville	2000	2687
Brinton Lake	Mill	Highpoint Drive	2000	4691
Cheyney	Thornton	Station Rd. N.	2000	4410
Dilworthtown	Westtown	Kline Drive	2000	1556
Dilworthtown	Brinton Lake	Concord	2000	2849
Springlawn	Cheyney	Three Wood Drive	2000	270
Glen Mills	Thornton	Cheyney	2001	3110
Cheyney	Springlawn	Glen Mills	2001	4389
Sweetwater	Creek	Woods	2001	1123
Glen Mills	Long Lane	Springlawn	2001	2802
Dilworthtown	Wilmington Pike	Chadds Cove	2002	4991
Glen Mills	Yellow House Lane	Thornton	2002	3775
Gradyville	Cottage Lane	Old Gradyville	2002	1522
Dilworthtown	South Concord	Westtown	2002	3928

Note: Each name is assumed to be "Road" unless noted otherwise
Source: DVRPC

Among the 37 road segments described in Table 10.1, the traffic volume of one, Street Road (SR 926), between Shady Grove Way and Penns Grant Drive, is clearly the highest volume. This is not surprising, given its regional significance and orientation. The remainder of the road segments are significantly lower in volume and are more Township oriented by location. The highest volume roads of the Table 10.1 are extracted in order of volume for comparison in the following Table 10.2:

Table 10.2

Highest Traffic Volumes

<u>Road Name</u>	<u>From</u>	<u>To</u>	<u>AADT</u>
Street (SR 926)	Shady Grove	Penns Grant	11,286
Springlawn	Cheyney	Glen Mills	6,096
Glen Mills	Stoney Bank	Creek	5,739
Dilworthtown	Wilmington Pike	Chadds Cove	4,991
Brinton Lake	Mill	High Point Dr.	4,691
Cheyney	Thornton	Station Rd. N.	4,410

Source: DVRPC

When comparing the six (6) most heavily traveled roads in the Township with the road classifications made by PennDOT (see Figure 10.1), there is some, but not complete, corresponding relationship. The following Table 10.3 lists those classifications:

Table 10.3

Road Classifications

<u>Road Name</u>	<u>Classification</u>
Street Road (SR 926)	Minor Arterial
Springlawn Road	Local Primary
Glen Mills Road	Minor Arterial / Collector
Dilworthtown Road	Minor Arterial / Local Primary
Brinton Lake Road	Minor Arterial
Cheyney Road	Minor Arterial

Source: PennDOT

Springlawn Road is classified as a Local Primary road, yet carries a volume of traffic second only to Street Road. This classification and perhaps the eastern end of Glen Mills Road should be reclassified by PennDOT to reflect their volumes. While the volume of traffic is critical, the classification may be important in the assignment of improvement funds and prioritization. Generally, the most heavily traveled roads in the Township are classified as Minor Arterials.

The construction of the Township's roads is generally indicative of a rural community. Most of the arterials, collectors and local primary roads have no paved shoulders or curbing and are single lane in each direction. Many were in existence before the volumes and speeds of today's traffic. The result of increased usage of the Township roads has been increased safety problems and accidents. Acquiring data about safety and traffic accidents is difficult since the Township relies on State Police services for public safety. However, the Township's previous Comprehensive Plan contained traffic safety data updated to the year 1993. This ten year old information is reasonably indicative of current conditions and is presented here as evidence that some of the Township's roads have been the site of recurring accidents and should be considered for intersection and roadway modifications. The following table summarizes the traffic safety data available in the 1993 Comprehensive Plan from information between 1986 and 1990:

Table 10.4

Roadway Problems and Conditions

<u>Intersection</u>	<u>Accidents</u>	<u>Cause</u>
Cheyney and Glen Mills Roads	31	Other
Routes 926 and 352	23	Sight distance
Dilworthtown and Brinton Lake Roads	10	Sight distance
Creek Road and Glen Mills Road	9	Other
Creek and Tanguy Roads	6	Other
 <u>Road Segments</u>		
Dilworthtown Road	6	Drainage
Route 352 (Middletown Road)	6	n/a
Brinton Lake Road	5	n/a
Cheyney Road (south of Glen Mills)	5	n/a
Cheyney Road (north of Locksley)	5	n/a

Source: Township Comprehensive Plan, 1993

Note: Term "Other" refers to safety problems other than sight distance, drainage or grade.

The intersections and road segments noted in Table 10.4 are, for the most part, still in the same condition they were when the data was collected, with the major exception being the subsequent installation of four-way stop signs at the intersection of Cheyney and Glen Mills Roads. Traffic volumes have increased over the period, raising the concern over need to develop road improvement programs in the future to mitigate these problem areas.

A specific local traffic problem is the presence of large dump trucks carrying stone material from the quarry in the southeast portion of the Township near Glen Mills. These trucks are traveling to and from the quarry to Route 1, using Sweetwater Drive, Glen Mills and Cheyney Roads. Their speed and size make them incompatible with the other traffic using these roads. This is an issue that has existed for some time and will remain as long as the quarry remains in operation. Mitigation of this problem might entail the use of trucks during restricted times so as not to compete with other Township traffic. However, even this may have undesirable consequences, such as night operations at the quarry.

Non-vehicular Transportation

Thornbury Township has a diverse system of open space areas, well distributed throughout the municipality. These serve the population well, although they are generally accessed by car. The Township's 1996 Open Space and Recreation Plan proposed a system of off-road trails and paths that would connect these major open spaces and parks. In some cases, the proposed trails utilized existing utility rights-of-way and portions of open space. In many cases, however, the links were proposed on existing roadways. **Figure 10.2** provides an illustration of the proposed trail system, along with the locations of public and private open space. Taken as a whole, this was an ambitious proposal, and one that has the potential to make most areas of the Township accessible by means other than motorized vehicle.

As the Township moves forward to implement the trail network, which this Comprehensive Plan encourages, it should be cautious in how it integrates pedestrian mobility into the motor vehicle right-of-way. Paved trails and sidewalks that parallel existing roadways need to be carefully constructed to avoid safety related problems. Thornbury Park at the intersection of Glen Mills Road and Thornton Road, with its highly developed recreational facilities, would make a good demonstration project for a limited trail system designed to connect the park with the surrounding communities. There are several nearby Planned Residential Developments (PRD) with their own internal open space systems that could be integrated into a localized system of both on-road and off-road trails in the central sector of the Township. Later extensions of this central system could link the eastern and western areas of the Township.

The use of utility and natural corridors for development of trail systems offers great potential. For instance, Figure 10.2 illustrates two natural gas pipeline corridors traversing the Township in a north-south direction which have the ability to connect to adjacent municipalities. Coordination with the utility authorities would need to occur to secure permission to use these lands. Chester Creek, which flows through the eastern area of the Township, offers additional potential for off-road trails. South of Thornbury Township in Middletown, Aston and Chester Townships there is a County funded project in the engineering stage, known as the Chester Creek Trail. This is a rail-trail project where agreements between land owners to preserve right-of-way are being sought and a feasibility study is underway.

On a smaller scale within Thornbury Township, Chester Creek's corridor is the site of a project to develop a stream-side trail. This project has been undertaken by the Township's Environmental Advisory Council and work is being done by community volunteers. The area being developed extends from

the foot of Old Gradyville Road upstream to the Township property at Cheyney Road. The trail passes through Bonner Park, an easement through private property and through SEPTA property. Part of the trail project includes planting trees and shrubs along the waterway, which is being jointly funded by the Township and a mini-grant from Delaware County. Although use of the trail in the short term is to be local, there may be opportunities in the future for linkage to other projects in the region.

Public Transit

Historically, Thornbury Township has been served by train on a line between Philadelphia and West Chester. Station stops included Glen Mills, Locksley and Cheyney. Stations continue to exist at these locations, although the service has long been discontinued. Portions of the line are used by the West Chester Railroad tourist train for recreational purposes. There may be opportunities for reinitiating commuter train service on the line through coordination between SEPTA (Southeast Pennsylvania Transportation Authority) and Delaware County. On a regional level, many issues and concerns would have to be addressed before such service could be returned. Locally, the stations in Thornbury Township have limited parking capacity. Options for expansion of lots or relocation of stops would have to be investigated. However, the concept has merit for long term planning and should be pursued by the Township and regional transportation authorities. If efforts to reinstate train service are not successful, the use of the right-of-way should be retained for non-vehicular purposes.

Currently, SEPTA operates several local bus lines which either traverse the Township or are nearby. Bus Route 11719 originates in West Chester, travels West Chester Pike to Milltown, Chester Road, covers a short distance on Street Road, to Tanguy Road, to Cheyney University, south on Cheyney Road to Route 1, to Middletown Road, to Chester City. Bus Route 111 follows Route 1, with the nearest stop at Concord Village Shopping Center at Cheyney Road. It extends to the 69th Street Station at Upper Darby. Bus Route 120 connects Cheyney University to Newtown Square and the 69th Street Station. These three routes allow a rider several options, including commuting into Philadelphia. There are no park and ride lots within the Township which might assist in the regular use of bus service, other than several small lots that are adjacent to the closed railroad stations noted above. SEPTA also operates the R-3 regional rail line from its station in Media to University City, 30th Street Station and Center City, although ridership has been limited.

Although not technically public transit, the use of car pools by Township residents offers an opportunity to reduce the number of single-occupant

vehicles on the roads. A variation on this option is the park and pool system, requiring centralized parking lots where motorists could leave cars during the day and consolidate into one vehicle for the commuting trip. In either case, programs would need to be prepared by transportation authorities and the Township to encourage their use. The primary element of such a program is the identification of potential participants and matching them together by origin and destination. This is a large task, often undertaken by large employers to reduce parking demands. At the local level, the Township could provide a mechanism for residents to register an interest in participating and communicate potential interest. Other options would be for Delaware County or DVRPC to initiate the effort through a Transportation Management Agency.

Transportation Improvement Program

DVRPC and its member counties, including Delaware County, maintain a Transportation Improvement Program (TIP) on an annual basis. Proposed projects within Thornbury Township and nearby areas include the following:

- Locksley Road Bridge over Chester Creek, total replacement of County owned bridge (1929), current weight limit is 3 tons. Funded with \$507,000 between 2003 and 2006. This bridge was closed for safety reasons in 2003 and is scheduled to reopen in 2007.
- Concord Township Closed Loop System. Interconnection of ten (10) traffic signals on Routes 202 and 1 near intersection.
- PA 926 (Street Road) at PA 352. Channelize intersection and realign curve. Funded with \$1,000,000 in 2003
- Chester Creek Branch Rail Trail. Convert Old Chester Creek Branch Line to multi-use trail. 6.7 miles in Middletown, Aston and Chester Townships.
- U.S. Routes 202 and 1. Intersection and Route 202 widening to 6 lanes with grade separated intersection. Located in Thornbury, Concord, Bethel and Chadds Ford Townships.

Other than the Locksley Road bridge over Chester Creek, the projects listed as being in the DVRPC Transportation Improvement Program are on the edges or beyond Thornbury Township. However, each will have an impact on the Township, primarily in the way traffic generated by the Township accesses nearby regional roads. In particular, the proposed improvements to Routes 202 and 1 should have a major positive impact on the local traffic pattern. Thornbury

Township (Delaware County) has consistently supported this planned improvement due to its close proximity and potential for decreasing cut-through traffic from regional roads.

Transportation Plan

1. Continue to require developers of proposed land development to demonstrate the ability of the road network to accommodate additional traffic volumes and movement through traffic impact studies. In particular, require new development to connect to the existing road network in the safest and most efficient manner. Require both on-site and off-site road improvements where appropriate. Review Township ordinances for adequacy to ensure that new growth has a neutral impact on the transportation network. Figure 10.2 identifies some of the locations where future development and new road access points may occur.
2. Coordinate with PennDOT and other regional transportation planning agencies like Delaware County and DVRPC to develop plans for and fund needed road and intersection projects. Areas where accidents recur should be the highest priority.
3. Maintain a road resurfacing program for Township roads on a continuing basis which anticipates declining surface conditions. Consider preparing a road inventory with data about construction and history of improvements which could become part of the annual budget preparation process.
4. Identify locations within the Township for a demonstration project of off-road trail components linking facilities, communities and institutions. Consider Thornbury Park and its environs as an initial project that might be expanded in the future to provide linkage for pedestrians, cyclists and equestrians to all parts of the Township. Coordinate with surrounding municipalities to encourage regional links.
5. Survey Township residents on their commuting patterns, with the potential intent of locating a park and ride lot within the Township for SEPTA riders. Such a lot, if found to be feasible, should be located centrally and be accessible by off-road trails if possible.
6. Investigate feasibility of providing train service on the existing SEPTA rail line along Chester Creek and utilizing existing train stations and lots at Glen Mills, Locksley and Cheyney. The existing or expanded parking lots could serve both train and bus service.

7. Investigate the use of traffic calming techniques at locations where regional traffic uses the Township's road network for connections to major roads outside the Township. Coordinate with PennDOT.

Summary

The transportation network in Thornbury Township is a diverse pattern of primarily rural roads that have evolved out of need over the several centuries of growth. The character of the road network is in keeping with the low density residential pattern of development. As such, the design capacity of many roads is exceeded by current levels of usage caused by recent growth. Future growth will be required to integrate into this existing pattern. Opportunities for major road improvements within the Township boundaries will be limited by existing development patterns and geography. Development of the lands at the western end of the Township have close access to regional roads such as Routes 202 and 1. Other parts of the Township are far more reliant on local roads. Any potential redevelopment of the quarry properties in the eastern sector will have to carefully consider the local roads not only in Thornbury Township, but also the surrounding municipalities which have a similar rural road pattern.

The establishment of an off-road network of trails for all users could be of great benefit to Township residents. Such a network could be a major enhancement to the existing areas of open space which are located in all parts of the Township. Although this network would probably have to use road rights-of-way in some cases, the ability to walk or ride a bicycle safely throughout the Township, to and from residences, parkland and nearby communities, should be made possible.

Because of Thornbury Township's relationship to the surrounding transportation pattern, local residents, businesses and institutions are effected by road construction, bridge closures and general traffic beyond the Township borders. While having limited influence over these conditions, the Township should continue to participate in regional transportation forums, so as to have necessary input. Both at the County level and at the DVRPC level, Thornbury Township can play a role in shaping the future transportation pattern of the area.