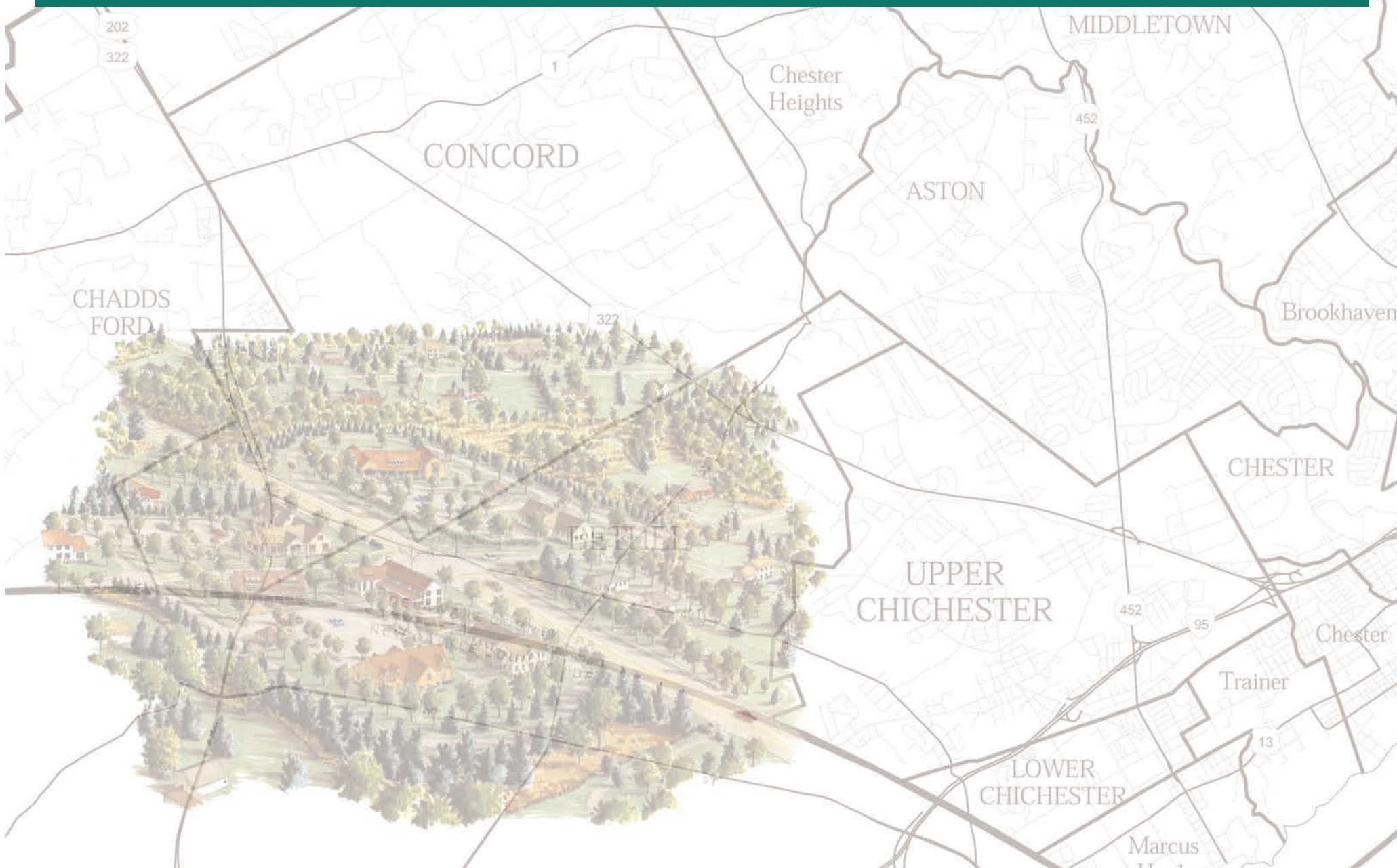


Route 322 Land Use Strategies Study



ROUTE 322 LAND USE STRATEGIES STUDY DRAFT



Delaware Valley Regional Planning Commission

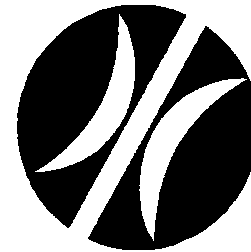
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JUNE 2002

Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency that provides continuing, comprehensive and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties, as well as the City of Philadelphia, in Pennsylvania; and Burlington, Camden, Gloucester and Mercer counties in New Jersey.

DVRPC provides technical assistance and services; conducts high priority studies that respond to the requests and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues; determines and meets the needs of the private sector; and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the Commission.

Our logo is adapted from the official DVRPC seal, and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole, while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.



DVRPC is funded by a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

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EXECUTIVE SUMMARY

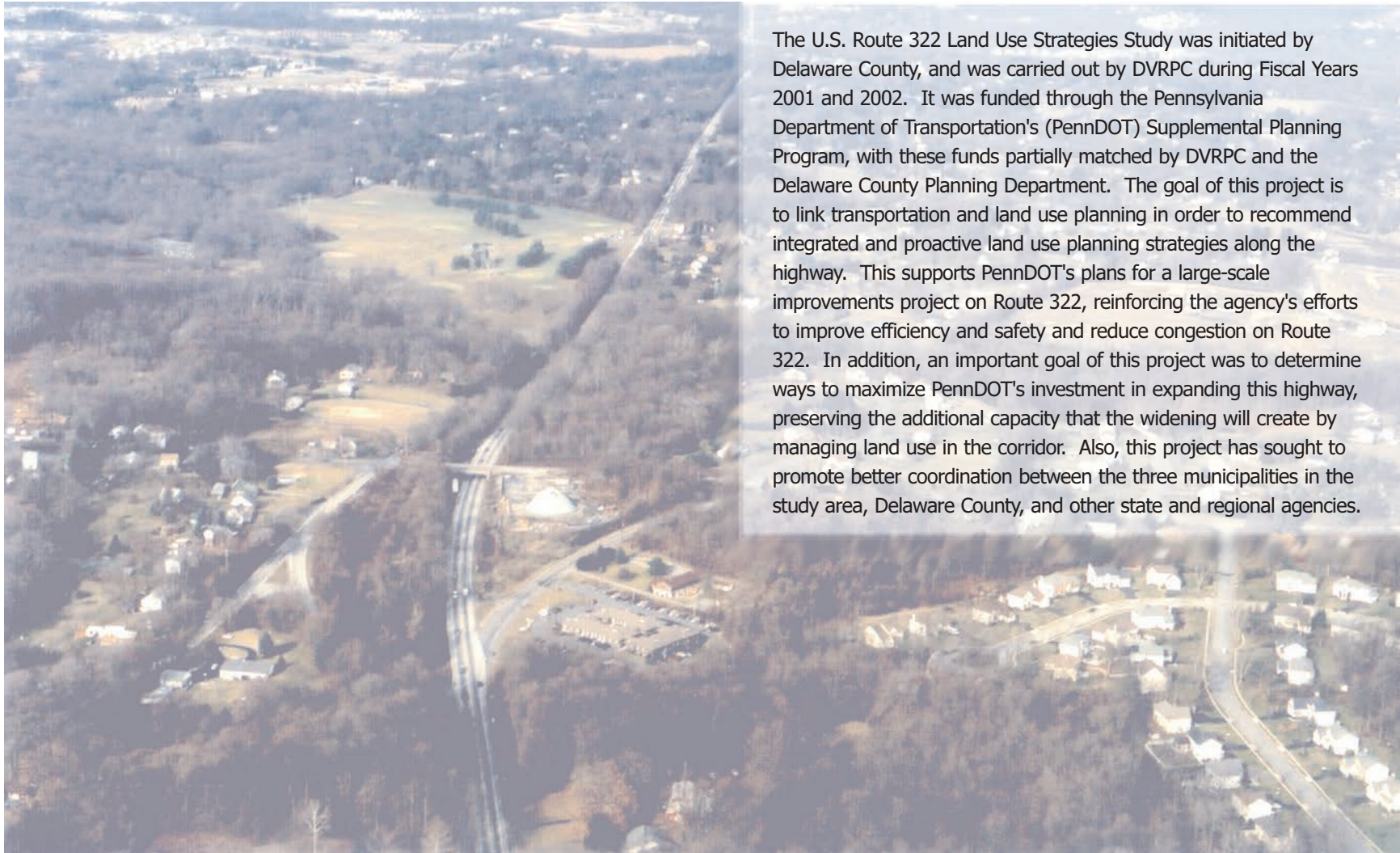
The Delaware Valley Regional Planning Commission (DVRPC) frequently undertakes transportation corridor studies in both Pennsylvania and New Jersey, working closely with county and municipal officials and the respective State Departments of Transportation. The purpose of this corridor study is to link transportation and land use planning in the Route 322 corridor, supporting the Pennsylvania Department of Transportation's (PennDOT) plans for a large-scale improvements project on Route 322. This project seeks to preserve the additional capacity that the widening will create by managing land use in the corridor, while allowing the local municipalities to realize their land use goals.

The Route 322 corridor includes three municipalities (Bethel, Concord, and Upper Chichester townships) in Delaware County. In the study area, which runs about seven miles from Route 322's intersection with Route 202 to its interchange with Route 452, the highway serves two conflicting functions, as a regional highway and a commercial center. Route 322 is used by regional travelers as a connection between I-95, Route 1, and Route 202. Meanwhile, commercial uses and commercially zoned properties characterize the majority of land along Route 322, and access to these uses is important for the economic health of these townships. The recommendations of this study provide ways to ameliorate this conflict by managing access to Route 322, changing land use regulations along the highway, and promoting transportation alternatives.

This corridor study provides an integrated, long-range framework for planning transportation improvements and land use changes along Route 322. Individual projects within the corridor can be seen as part of a larger strategy that links land use and transportation, allowing local plans and regional strategies to harmonize.

The Route 322 Land Use Study provides specific recommendations to the municipalities in the Route 322 corridor, within the framework of a corridor-wide plan. Many of these recommendations deal with *transit and pedestrian improvements* along Route 322 and nearby roads, increasing transportation alternatives along the corridor, and reducing traffic congestion and pollution. Other recommendations relate to *access management*, which involves controlling vehicular access to Route 322 from adjacent businesses and other land uses. Access management can improve safety and highway efficiency, and if done in conjunction with sound land use planning, can significantly reduce congestion. In addition, this study recommends that corridor municipalities consider *multi-municipal planning*, which can make planning efforts much more consistent and effective.

An important aspect of this study has been its emphasis on implementation of recommendations. The appendices of this report contain zoning modifications, new zoning districts, and comprehensive plan amendments that are specifically tailored to each of the municipalities in the Route 322 corridor.



The U.S. Route 322 Land Use Strategies Study was initiated by Delaware County, and was carried out by DVRPC during Fiscal Years 2001 and 2002. It was funded through the Pennsylvania Department of Transportation's (PennDOT) Supplemental Planning Program, with these funds partially matched by DVRPC and the Delaware County Planning Department. The goal of this project is to link transportation and land use planning in order to recommend integrated and proactive land use planning strategies along the highway. This supports PennDOT's plans for a large-scale improvements project on Route 322, reinforcing the agency's efforts to improve efficiency and safety and reduce congestion on Route 322. In addition, an important goal of this project was to determine ways to maximize PennDOT's investment in expanding this highway, preserving the additional capacity that the widening will create by managing land use in the corridor. Also, this project has sought to promote better coordination between the three municipalities in the study area, Delaware County, and other state and regional agencies.

This photograph looks northwest along Route 322, showing Bethel and Concord Townships, with the Route 261 bridge in the foreground.

Study Contents

Chapter 1 introduces the Land Use Strategies Study, providing a review of previous studies, an overview of the planning process, and a description of the importance of linking land use and transportation.

Chapter 2 analyzes existing conditions in the study area. Among the issue areas covered are land use (including land use regulations such as zoning), demographics and housing, employment and economic resources, natural resources, cultural and historic resources, infrastructure, and transportation.

Chapter 3 identifies goals and objectives for the corridor as a whole, adapted from the comprehensive plans of the municipalities along the corridor.

Chapter 4 gives specific recommendations for action, mostly directed to the municipalities in the study area, and also provides a comprehensive corridor plan for the area covered by this study.

Appendix A contains the implementation documents that were produced by DVRPC and the Delaware County Planning Department to implement the recommendations, and includes new zoning districts, modifications to existing districts, and comprehensive plan amendments.

Appendix B contains a list of study participants.

Previous Studies

Several DVRPC studies preceded this Land Use Strategies Study. In 1994, DVRPC prepared the *US 322 Traffic Analysis Study, I-95 to US 1*. This document describes traffic patterns on Route 322 at the time of the study, and projects traffic volumes under certain alternatives. This report was then supplemented in 2000.

Also, the *US 322 Section 100 Congestion Management Systems Analysis*, published by DVRPC in 1995, contributed to the Land Use Strategies Study. The Congestion Management Systems Analysis examined several congestion management strategies, and determined that the most effective traffic reduction techniques would be employer-based Transportation Demand Management measures. These measures, which would require sponsorship by major employers in the area to be effective, are designed to reduce traffic at rush hours caused by employees going to or returning from work. They include flexible work schedules, telecommuting, employer transportation coordination, vanpool formation or carpool encouragement, transit subsidies, or similar arrangements.

In addition, the Route 322 Land Use Strategies Study was modeled on a similar study for Route 202, Section 100, conducted by DVRPC during Fiscal Years 2000 and 2001. This study established a Steering Committee, studied existing conditions in the study area, developed goals and objectives for the municipalities in the study area as a group, and provided a set of planning strategies and specific recommendations for each municipality in the study area with illustrations highlighting key access management approaches.

Many of the recommendations of the Route 202 Section 100 Land Use Strategies Study may also apply to some areas of the Route 322 corridor. For example, access management is a crucial issue in both the Route 202 Section 100 corridor and the Route 322 corridor. Essentially, access management involves the coordination of through traffic with vehicles entering and exiting a roadway to create an efficient traffic flow. Access management techniques are often based around limiting access points to major roads, to prevent turning movements from conflicting with high-speed, through traffic. Implementing proper access management controls will aid in alleviating present and future congestion and safety problems.

The Route 322 Land Use Strategies Study is also compatible with local comprehensive plans, Delaware County's comprehensive plan, and DVRPC's regional long-range plan, *Horizons 2025* (discussed in more detail on page 24). The recommendations of the study also seek to promote compliance with the Pennsylvania Municipalities Planning Code (MPC). In particular, Article III of the MPC requires that municipalities plan for land use, natural resources preservation, historic preservation, community facilities, and circulation, and also that ordinances must be consistent with the municipal comprehensive plan. Article VI further requires consistency, and also specifically states that the zoning ordinance should encourage the preservation of agricultural areas and other important resources.

Planning Process

The Land Use Strategies Study was conducted by DVRPC over Fiscal Years 2001 and 2002, with considerable support from the Delaware County Planning Department. In Fiscal Year 2001, a Land Use Strategies Study Steering Committee, composed of representatives from the study area municipalities and Delaware County, was established. Also in this year, municipal comprehensive plans and zoning ordinances were reviewed, goals and objectives were identified, and existing conditions were described.

Fiscal Year 2002 was the implementation phase of the Land Use Strategies Study. The majority of the report was written during this year, with input from local representatives and the Delaware County Planning Department. Also during this year, DVRPC and the Delaware County Planning Department held several individual and two joint meetings with Bethel, Concord, and Upper Chichester townships. The results of these meetings (including implementation documents produced) are described in Appendix A of this study, and participants are listed in Appendix B.

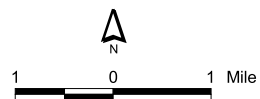
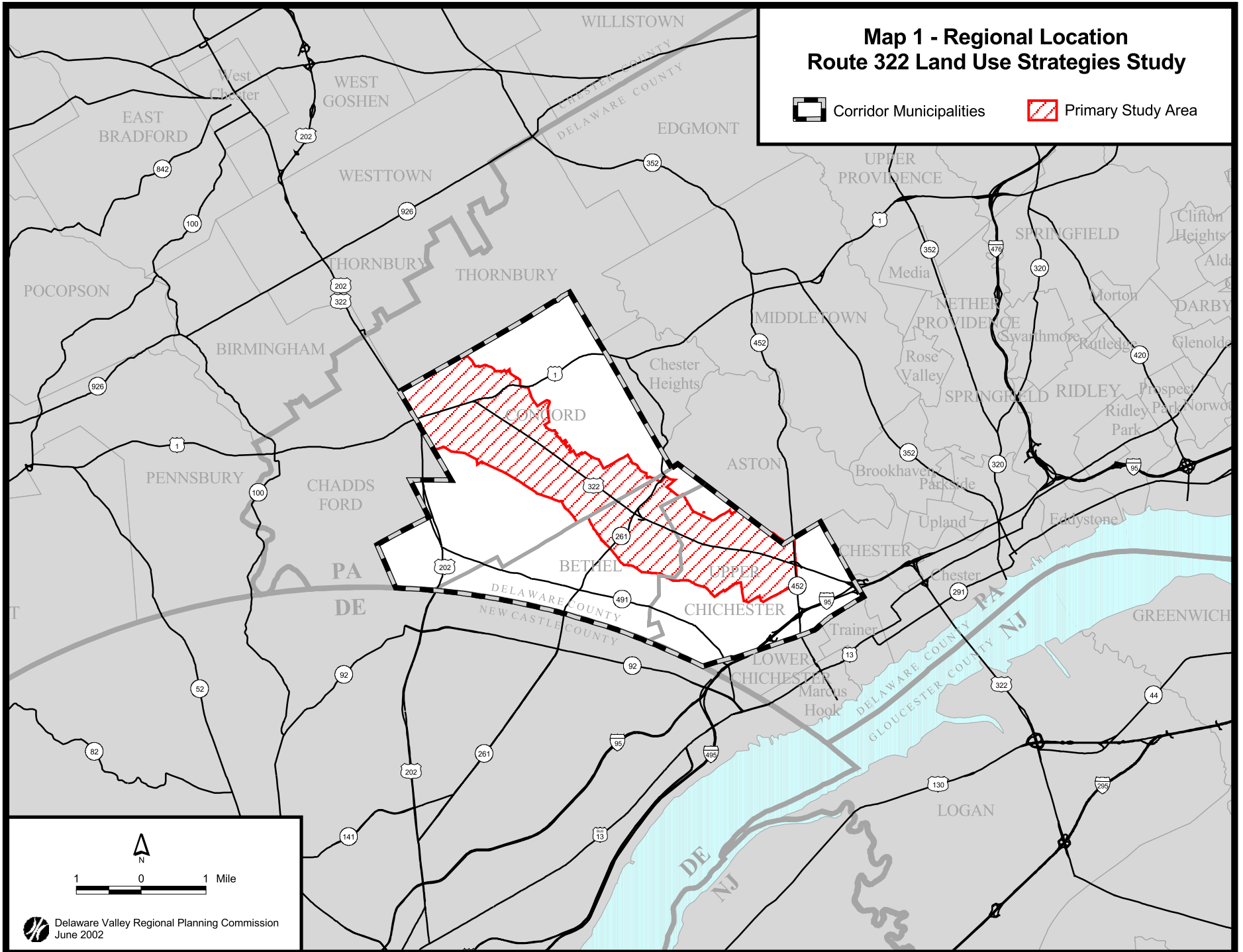
Map 1 - Regional Location Route 322 Land Use Strategies Study



Corridor Municipalities



Primary Study Area



Corridor Description

The Route 322 corridor is located in the southwestern part of Delaware County, connecting I-95 in Chester City to Route 1 and Route 202 in Concordville. The corridor is slightly over 7 miles long. The municipalities in the Route 322 corridor are Concord, Bethel, and Upper Chichester townships, all located in Delaware County. The location of the study area is shown in **Map 1**.

Route 322 is also known as Conchester Highway in the study area. It runs east-west across Pennsylvania, connecting Atlantic City, New Jersey with Cleveland, Ohio. In the study area (which makes up only a small part of its total length), Route 322 is a two-lane highway, but has been expanded to four lanes approaching its interchange with Route 452. It also widens to four lanes when it merges with Route 1, in the Concordville area.

This section of Route 322 has recently been experiencing rapid change. Painter's Crossroads, located at the western edge of the study area, is becoming a regional employment center, with a high employment base and new construction continually occurring. Population in the study area is also increasing rapidly. While it is not possible or desirable to prevent these changes from occurring, if they are not shaped and managed by proactive planning, these changes threaten to overwhelm infrastructure systems and erode local character and the historic charm of the area.

Route 322 Transportation Improvement Project

The Route 322 Land Use Study was initiated by Delaware County to coincide with the Pennsylvania Department of Transportation's (PennDOT) transportation improvement project along the highway. PennDOT completed a Needs Analysis Report in 1994 for the Route 322 corridor. According to this report, Route 322 suffered from a variety of problems that justified transportation improvements, including congestion, unrestricted vehicle access to the highway, and poor intersection geometry. Because of these problems, accidents have been common along Route 322, particularly near congested intersections. Also, PennDOT determined that Route 322 and nearby roadways would not be able to accommodate future growth in the corridor, based on DVRPC's projections of population, employment, and traffic volumes.

The major improvements proposed by PennDOT are the addition of two through lanes of traffic through most of the corridor, increasing the number of travel lanes from two to four. Also, the improvements include the separation of opposing directions of travel in some places, and the addition of jughandles to limit left turns. Overall, the improvements would result in a major increase to the highway's width along most of the corridor.

PennDOT currently controls a large right-of-way to the south and west of the existing roadway, averaging sixty feet in width, and most of the proposed widening of Route 322 will occur in this area. This will limit land acquisition costs and adverse effects on property owners. However, in some areas, the widening occurs to the north and east of the highway

instead, to protect valuable resources or minimize impacts to properties. Improvements to major intersections, which include Route 1, Featherbed Lane/Mattson Road, Route 261, Cherry Tree Road, and Route 452, were considered separately from the main widening improvements, and significant changes to some of these intersections are proposed.

In September 2001, PennDOT completed the Environmental Assessment (EA) for the Route 322 Transportation Improvement Project. This report documents the impacts of the proposed improvements on the highway's environmental, historical, and cultural environments, and contains more information on the improvement project, including detailed maps. This EA is undergoing thorough review by the Federal Highway Administration, and PennDOT hopes to receive a Finding of No Significant Impact (FONSI) by the fall of 2002.



Figure 2. Facing northwest along Route 322 from the Foulk Road bridge, the corridor looks rural and undeveloped.

Linking Corridor Land Use and Transportation Planning

Corridor planning recognizes the linkages between land use and transportation, and allows the creation of integrated, comprehensive plans that cross municipal and county boundaries. According to the Institute for Traffic Engineers:

"...trip-making patterns, volumes, and modal distributions are largely a function of the spatial distribution and use of land. Over the long run, the spatial distribution of land use can greatly influence regional travel patterns, and in turn this land use can be influenced by the level of accessibility provided by the transportation system. Avoiding future congestion therefore requires careful attention to zoning and land use plans, in coordination with the strategic provision of transportation services to influence where development occurs."¹

Transportation corridors are appropriate planning areas for linking land use and transportation. These corridors are large geographic areas that provide important connections between regions, and are defined as networks of transportation links, services and facilities that are of regional importance when viewed collectively. Corridor planning has a strong multimodal emphasis, with transit lines and bicycle and pedestrian facilities considered important and integral components of the transportation network.

¹ Delaware Valley Regional Planning Commission, 1991, *Linking Land Use and Transportation in the Delaware Valley*.

The benefits of planning at the corridor level are many. Corridor planning provides a general, long-range framework for needed transportation improvements and land use changes. This larger view allows local projects to occur as part of a larger strategy, rather than as isolated improvements, and provides a framework for establishing priority. Also, because the corridor is treated as a network of various transportation modes, corridor planning often examines alternatives to simple road improvements, such as transit options, access management, and transportation demand management programs. In general, corridor planning, in linking land use patterns with transportation networks, provides a means for local plans and regional strategies to harmonize.

Also, Pennsylvania's Municipalities Planning Code encourages multi-municipal planning. Revisions to Article III and Article XI of the MPC during the summer of 2000 (Acts 67 and 68) have made the use of multi-municipal planning easier and more attractive for local governments. Corridor planning allows coordination of transportation and land use planning across municipal boundaries, and can be a first step in multi-municipal cooperation.



Figure 3. Congestion along Route 322 is a problem at all times of day, as this photo taken in mid-afternoon shows. Coordination of land use and transportation planning, in conjunction with the planned widening project, can help to alleviate this problem.

Linking the Route 322 Land Use Study and PennDOT Improvements Project

This land use study is designed to complement PennDOT's transportation improvement project for Route 322, exploring ways to reduce congestion, manage access, increase safety, and plan for future growth to minimize the burden on the highway. In addition, this study is meant to preserve the additional capacity that PennDOT's project will add to Route 322, maximizing PennDOT's investment in expanding the highway. This study also seeks to aid the municipalities in the study area to adjust to the highway expansion by managing land use in the corridor before this expansion has begun. During the fall of 2001, PennDOT and DVRPC held joint meetings with each of the municipalities in the study area in turn. At these meetings, PennDOT and their consultant, Alfred Benesch & Company, a highway design firm, described the improvement project, and DVRPC explained the role of the land use study within PennDOT's larger project. These joint meetings helped municipal officials to understand the relationship between the transportation improvement project and the land use study, and enabled DVRPC to place this study's land use recommendations within the larger framework of transportation improvements.

PennDOT has recently updated its Sound Land Use Implementation Plan, originally released in November 2000. Also, PennDOT recently published a brochure, Linking Land Use and Transportation Planning, that describes the importance of this approach for highway design. These activities demonstrate PennDOT's commitment to accompany transportation improvement projects with sound land use

planning. DVRPC encourages PennDOT to consider the conclusions and recommendations contained in this study as one means of implementing their land use and transportation linkage policies.

While most of the recommendations of the Route 322 Land Use Study are concerned with land use, several deal with transportation improvements. The implementation of these recommendations (placement of bus shelters, for example) is often beyond the scope of local government power. For these recommendations, PennDOT's support and cooperation is necessary. DVRPC strongly encourages PennDOT to take an active role in implementing these recommendations, and to continue to coordinate the transportation improvement project with the study area municipalities and the Delaware County Planning Department.

CHAPTER 2

EXISTING CONDITIONS

This chapter provides a comprehensive inventory and analysis of land use, transportation, and socio-economic conditions in the Route 322 corridor. It assesses the intensity of land use, evaluates the compatibility of existing uses and rate of land consumption, as well as the direction development may be expected to take in light of the proposed highway improvements. Ultimately, this inventory and analysis is intended to assist local government officials, Delaware County staff, and local citizens to recognize potential land use and transportation issues, assess and determine future needs, and develop comprehensive policies and strategies to respond effectively to future growth and travel demand within the corridor.

Throughout this document, two geographic levels of analysis are used. The first is the immediate corridor of Route 322, which includes most land within one-half mile of the highway, although this range has been adjusted in places to conform to zoning districts or natural or manmade boundaries. Whenever possible, this document's discussion of existing conditions refers to this immediate corridor. In some cases, a broader discussion of existing conditions is appropriate, and in these instances, conditions in the three municipalities in the study area are described.

The information included in this chapter is based on data available through various governmental sources, Delaware County and local municipal plans and ordinances, and field surveys conducted during the preparation of this study. The chapter has been divided into seven sections:

- The **Land Use** section describes how land is used in the corridor, and analyzes the implications that current trends have on future development. It also describes land use regulations, concentrating especially on municipal zoning codes, and analyzes the effects that these regulations have on patterns of development.
- The **Population and Housing** section provides selected characteristics of the corridor's residents and housing market, and explains how these affect land use in the corridor.
- The **Economic Resources and Employment** section covers the economic base of the corridor, including major businesses in the corridor and employment patterns among corridor residents.
- The **Natural Resources** section includes a summary of environmental conditions that will affect the location and intensity of future development, including steep slopes, wetlands, prime agricultural soils, and open space resources.
- The **Cultural and Historic Resources** section addresses man-made factors that contribute to the character of the corridor and should be considered in new development. It describes the early history of the Route 322 corridor and identifies notable historic resources
- The **Community Facilities and Infrastructure** section documents public services and facilities in the corridor, such as water and sewer services, public recreation areas, and schools.
- The **Transportation** section describes the roadway network in the corridor, and analyzes traffic volumes, road functions, and intersection levels of service. It also explores alternative transportation modes, such as bus service, bicycling, and walking.

Land Use

The Route 322 corridor, located in the southwestern part of Delaware County, crosses through a variety of landscapes as it passes through Concord, Bethel, and Upper Chichester townships. As in many places, the character of these townships is largely determined by their pattern of land use. The density of residential development, the availability of open space and recreation areas, the level of industrial and commercial development, and the amount of land devoted to supporting transportation are all factors in determining how these communities have developed and will continue to function.

This section provides an overview of how land is used within the study area, both on the municipal level, considering the townships as a whole, and in the immediate corridor of Route 322. This section also analyzes patterns of land use change, demonstrating how development has occurred in the recent past and how it might continue to occur into the future. Current land use regulations such as zoning codes, which are important determinants of land use patterns and therefore of community character, are also explored.

Key Conclusions

In the municipalities as a whole:

- Bethel and Concord Townships are among the least developed municipalities in Delaware County, with more than half of their land still devoted to agriculture or covered by woods. Upper Chichester Township is more

densely developed than the other two townships, with higher percentages of land devoted to commercial and residential uses, among others. Thus, appropriate strategies for guiding development in these two areas will be quite different.

- The current landscape of the Route 322 corridor has been shaped by zoning ordinances and other land use controls. In Bethel and Concord Townships, the most common zoning classification is low-density residential, which requires homes to be on at least one acre of land. In Upper Chichester, the most common classification is medium-density residential, which permits four houses to an acre.
- In most developed areas in the corridor, the low-density land use patterns, with single-family homes and strip commercial development, create a car-oriented, suburban character. Continuing this pattern, new housing construction in the three townships is mostly of single-family houses, transportation-related land uses are generally new roads or parking lots, and new commercial development is typically large scale and car-oriented. Development of this type makes services, such as public transportation or sewer service, difficult to extend to corridor residents and businesses, and can exacerbate traffic congestion.

In the immediate corridor of Route 322:

- Because of zoning provisions and market forces, the land along Route 322 is generally more developed than land at a greater distance from the highway, and has an especially high level of large commercial development. While commercial growth of this sort can have many positive benefits, and land directly along a major transportation route is a logical place for development, commercial development along Route 322 should be managed and shaped, instead of occurring at random.
- Most land along Route 322 is zoned for highway commercial or low-density residential development, with minimum lot sizes of one acre. If current zoning along Route 322 continues to be enforced, undeveloped land along and near the highway may be replaced by low-density or sprawling residential development, large-scale commercial centers, and business parks.
- The planned expansion of Route 322 will disrupt some uses along the highway, and will also serve to encourage future development in its immediate area. Planning for these events should occur now, before this disruption and added growth pressure take effect. In addition, local officials should view the planned widening as an opportunity to correct or mitigate some current access and safety issues along the Route 322 corridor.

Land Use – Municipal Level

The segment of Route 322 that is studied in this report is just over 7 miles long, from its western end at its intersection with Route 202 to its eastern end at its interchange with Route 452. The total land area of Concord, Bethel, and Upper Chichester townships is just under 16,500 acres, or about 25 square miles. Concord is by far the largest of the townships, taking up half of the total area, and also contains the longest portion of Route 322.





The western part of the corridor, in Concord and Bethel townships, is in the historic Brandywine Valley, an area with a strong agricultural history and sense of place. Until fairly recently, agriculture was the dominant use of land in this part of the county, but rapid development during the past few decades has now changed the appearance of the corridor. Sprawling low-density residential land use, with commercial development along major highways, has now become the norm in these municipalities. Upper Chichester has a slightly different history. Located near Chester City and highly-traveled I-95, industrial and residential development occurred earlier and at a higher density in Upper Chichester than in Concord and Bethel townships. This different history of development is still evident today, with noticeably different land uses and densities. Land use in 1995 is shown on **Map 2**.¹

¹ Definitions of each land use category used on this map can be found on the DVRPC website, at www.dvrpc.org.

Map 2 - Land Use, 1995 Route 322 Land Use Strategies Study

1995 Land Use

- | | |
|---|--|
|  Agriculture |  Residential - multi-family |
|  Commercial/Service |  Residential - single family attached |
|  Community Service |  Residential - single family detached |
|  Manufacturing - light |  Transportation |
|  Recreation |  Vacant |
|  Utility |  Water |
| |  Wooded |

-  Corridor Municipalities
 Study Area Major Highways
 Municipal Boundaries
 Rail

Source: DVRPC

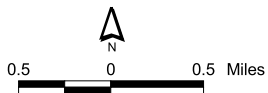
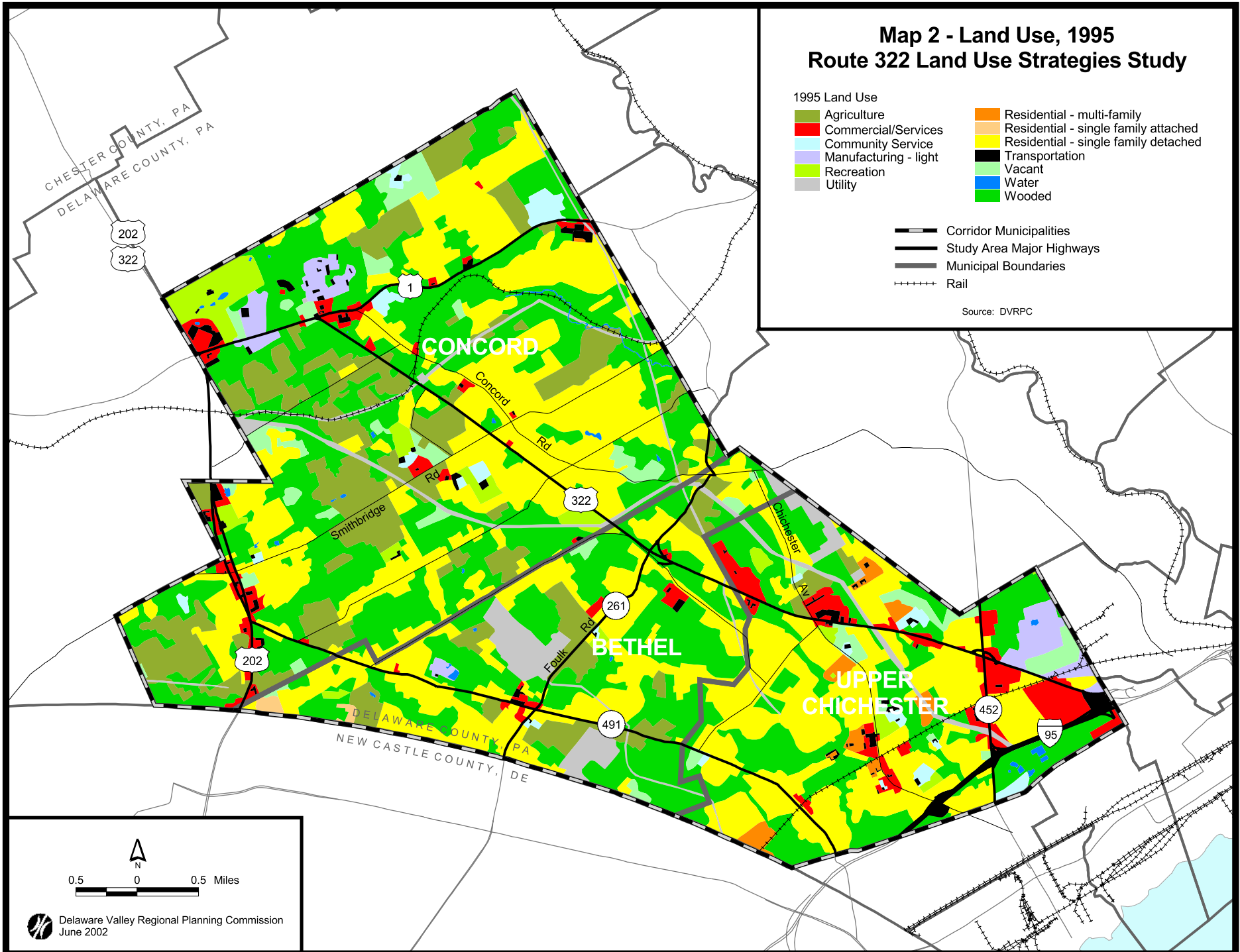


Table 1. Land Use, 1995

Municipality	Residential		Transportation		Commercial		Total Developed		Agriculture		Wooded		Total Undeveloped		Total Acres
	Acres	As %	Acres	As %	Acres	As %	Acres	As %	Acres	As %	Acres	As %	Acres	As %	
Bethel	939	27%	315	9%	47	1%	1,617	47%	383	11%	1,402	41%	1,838	53%	3,455
Concord	2,040	23%	771	9%	231	3%	3,753	43%	1,472	17%	3,167	36%	4,961	57%	8,715
Upper Chichester	1,432	33%	555	13%	388	9%	2,779	65%	47	1%	1,294	30%	1,499	35%	4,279
Corridor Total	4,411	27%	1,641	10%	666	4%	8,149	50%	1,902	12%	5,863	36%	8,298	50%	16,449
Delaware County	41,758	34%	16,447	13%	4,989	4%	76,678	63%	7,950	7%	29,364	24%	45,140	37%	122,058

Source: Delaware Valley Regional Planning Commission

As **Table 1** shows, in Bethel and Concord Townships in 1995, less than half of the total land area was developed. In Upper Chichester, the percentage of developed land was considerably higher, at about 65%. In each of these municipalities, most developed land is devoted to residential uses. Transportation uses, including roads and parking lots, were also major users of land, with 10% of the total land in the three townships supporting transportation. Only in Upper Chichester Township did commercial uses take up a large portion of total land in 1995.

In each township in 1995, a considerable portion of the land was wooded, ranging from 30% of the total land in Upper Chichester to nearly 41% in Bethel. A greater range could be found in the quantities of agricultural land in each municipality, which varied from 1% in Upper Chichester to 17% in Concord. In total, about half of the land in these three townships was undeveloped in 1995, compared to only 37% for Delaware County as a whole.



Figure 5. This WalMart in Upper Chichester Township is one of the largest commercial uses in the Route 322 corridor.

Just as patterns of land use can yield insights into the character of a place, patterns of land use change can show how community character has changed. For example, in a place where large areas of agricultural land are being converted into single-family residences, it is almost certain that social or cultural changes are occurring.

As **Table 2** demonstrates, each of these three townships developed at a faster rate than the county average between 1990 and 1995. During these years, over 650 acres of undeveloped land were developed, a 9% increase. In Delaware County as a whole, developed land increased by only 2%. Even Concord Township, which developed land at the slowest rate of the three townships, still exceeded the Delaware County average. Bethel Township, despite having the smallest area, converted the most land from undeveloped to developed uses.

Between 1990 and 1995, almost 390 additional acres of land became occupied by residential uses, nearly 140 acres were

consumed by transportation uses, and over 90 additional acres became commercial uses. Compared to Delaware County as a whole, these figures are quite high. Though these three townships have only a small portion of the land and population in the county, they contained more than one-third of the land converted to residential uses between 1990 and 1995, and almost two-thirds of the new commercial development.

The majority of this newly developed land was previously agricultural or wooded. Nearly 300 acres of agricultural land was lost to new development between 1990 and 1995, and a comparable amount of wooded land was also developed. Upper Chichester lost more than half of its little remaining farmland between these years, and Concord had nearly 150 acres of farms converted to other uses. Compared to the rest of Delaware County, agricultural and wooded land loss in these three municipalities occurred at a very rapid rate, twice the rate recorded for the County as a whole. Almost half of all the agricultural land lost in Delaware County occurred in these three municipalities.

Table 2. Land Use Change in Acres, 1990-1995

Municipality	Residential		Transportation		Commercial		Agriculture		Wooded		Total Land Developed
	Acres	As %	Acres	As %	Acres	As %	Acres	As %	Acres	As %	
Bethel	182	24%	59	23%	6	13%	-77	-17%	-134	-9%	245
Concord	87	4%	39	5%	10	4%	-148	-9%	-26	-1%	172
Upper Chichester	116	9%	41	8%	77	25%	-72	-60%	-140	-10%	236
Corridor Total	385	10%	139	9%	93	16%	-297	-14%	-300	-5%	653
Delaware County	1,138	3%	493	3%	136	3%	-597	-7%	-1,108	-4%	1,834

Source: Delaware Valley Regional Planning Commission

Table 3. Building Permits Issued, 1990-1999

Municipality	1990-91	1992-93	1994-95	1996-97	1998-99	Total
Bethel	108	172	202	316	384	1,182
Concord	52	30	132	582	618	1,414
Upper Chichester	226	135	304	214	91	970
Corridor Total	386	337	638	1,112	1,093	3,566
Delaware County	1,226	1,413	1,743	2,447	2,386	9,215
Building Permits in Corridor as % of County Total	31%	24%	37%	45%	46%	39%

Source: Delaware Valley Regional Planning Commission

Building permits provide another way to analyze land use change. As **Table 3** demonstrates, construction of new housing has occurred at a rapid rate in these three townships. Between 1990 and 1999, building permits for the construction of almost 3,600 new housing units were issued, most of these in Concord Township. Delaware County as a whole issued only about 9,200 building permits over the same period, meaning that these three townships issued about 39% of all permits in the county. Between 1996 and 1999, the issuance of building permits in the study area was especially rapid, and exceeded 40% of Delaware County's total during each of these years.

The majority of these new permits have been for single-family houses. Together, the three municipalities issued about 440 permits for two-family or multi-family houses, about 14% of the total permits issued. Between 1990 and 1995, all multi-family building permits were issued in Upper Chichester

Township, though Bethel Township issued more between 1996 and 1999.

In addition, according to the Delaware County Planning Department, over 3,000 proposals for new residential units were submitted in 2000 for the County as a whole. The three municipalities in the corridor ranked first, second, and third in the entire County, with Concord receiving 760 proposals for new residential units, Upper Chichester receiving 502, and Bethel receiving 331. Together, this totals nearly 1,600 proposed units, more than half of the County's total.

As both land use change and building permit data indicate, growth is occurring very quickly in the Route 322 corridor. This rapid growth reflects the influence of the municipalities' location near the major transportation routes of I-95, Route 1, and Route 202, as well as available developable land and supporting infrastructure.

Land Use – Immediate Corridor

Land use along Route 322 is generally similar to land use in the municipalities as a whole. As the land use map shows, a large proportion of the land immediately adjacent to Route 322 is wooded, with single-family residential uses also common. In accordance with municipal zoning provisions (discussed in the Land Use Regulations section) and in response to market forces, commercial businesses are also concentrated along Route 322. Agricultural uses are typically located at a greater distance from the highway, in the interior of the townships.

Concord Township

Concord Township contains about 4 miles of Route 322, the most of the three townships. Wooded land and low-density housing developments are the dominant land use along the highway, although commercial and industrial uses, as well as agriculture, are also common.

Over the last five years, rapid development has occurred in Concord Township, especially along Route 322. Near the western extreme of the study area, where Route 322 (which runs concurrently with Route 1) intersects Route 202, many major development proposals have been approved, and some new shopping centers and office parks have already been constructed. For example, the Shoppes at Brinton Lake, a shopping center of about 150,000 square feet located on the north side of Route 322, opened in 2001. A large office complex, containing about 550,000 square feet of office space

and a day care, has been proposed behind this shopping center, but is not complete.

South of Route 322 / Route 1 near its intersection with Route 202, a four-story office building which will employ over 1,000 people is under construction by Applied Card Services. To the east of this location is the Korman property, covering over 250 acres, which is the future site of the Concord Interplex office complex and light industrial park. According to current plans, this will eventually become a master-planned corporate campus with over 1.2 million square feet of office and industrial space, housed in mid-rise office buildings, research and development laboratories, and flex space. Farther east on Route 322 is the Spring Valley Business Park, which is partially built. Development proposals have been received to construct about 85,000 square feet of office space on the remaining undeveloped area, along with some warehousing space. In addition to these developments, a drive along the western part of the corridor shows several signs advertising multi-acre sites for office or commercial development.

Several major residential developments are also currently underway in Concord Township. The Fox Hill Farms development, located on Smithbridge Road near the boundary of the immediate study area of Route 322, includes nearly 500 age-restricted homes. Along Concord Road near the boundary with Bethel Township, an age-restricted development of over 200 homes, the Riviera at Concord, is under construction.

Bethel Township

In Bethel Township, which contains about 1.2 miles of the highway, more than half of all the land along Route 322 was wooded in 1995, with most of the rest used for low-density residential development.

Not much of the land along Route 322 in Bethel Township is currently developed, but a recent rezoning of a large strip of land along the south side of the highway may soon change this. The rezoning is from low-density residential to highway commercial, and the Township reports that some inquiries about development in this area have already been made, although no development proposals have been submitted. Nearby, a 61-acre piece of land zoned for industrial use, located along Garnet Mine Road east of its intersection with Route 261, is currently being advertised for sale.

In Bethel Township, the largest current residential development in the study area is the Northbrook development, located on Garnet Mine Road near the boundary with Concord Township. This development will consist of 200 semi-detached residential units.

Upper Chichester Township

Upper Chichester Township, located in the eastern part of the Route 322 corridor, is the most developed of the three municipalities in the study area, and contains about 2.1 miles of the highway. Just under half of the land along the highway was used commercially in 1995, with medium-density residential uses also occupying a significant amount of highway frontage. Large commercial land uses include the Larkins Corner shopping center and the Stony Pond Plaza, and numerous other smaller businesses have direct access to Route 322.

Despite the limited availability of undeveloped land along the highway, significant new development has occurred since 1995. Construction continues in the Naamans Creek Center and the Chelsea Business Park, with recent proposals for office buildings or storage facilities in the range of 30,000 to 40,000 square feet. In addition to these developments, signs advertising vacant parcels are visible in several places along Route 322.

Land Use Regulations

For purposes of continuity, the zoning districts of each of the three townships in the study area have been combined into one generic system of classification. Twenty-seven original zoning districts have been combined to create these seven

generic districts. This summary system, shown in **Table 4**, is not meant to replace the existing zoning codes, but merely to allow comparisons between the municipalities and to summarize the policy intent of current regulations. The boundaries of each of the summary zoning districts are shown in **Map 3**.

Table 4. Generalized Zoning District Descriptions

Zone	Description
R-1	Low-density residential – intended for low-density, single-family suburban development. Only single-family detached houses are allowed, and minimum lot size is one acre.
R-2	Medium-density residential – intended for suburban development at a higher density than R-1. Only single-family detached houses are allowed, and minimum lot size varies between 10,000 square feet (1/4 acre) and one acre.
R-3	High-density/multi-family residential – intended for a diversity of housing types at relatively high densities. Single-family, two-family, and multi-family units are permitted, and minimum lot size (or per-unit size) can be as low as 2,000 square feet.
C-1	Neighborhood/regional commercial – intended for commercial centers that mostly attract local customers. Most small-scale commercial uses are permitted, and minimum lot size varies between a few thousand square feet and one acre.
C-2	Highway commercial – intended for larger scale commercial centers that serve a larger market. Most commercial uses are allowed, and minimum lot size is one acre.
LI	Limited/light industrial – intended for industrial uses that are appropriate in a suburban setting. Non-nuisance industrial uses, as well as office and laboratory uses, are permitted. Lot size is generally two or more acres.
PBD	Planned business district – encompassing industrial and office parks, as well as large-scale commercial development. Non-nuisance industrial, research, office, or commercial development is permitted, with very large lot sizes; minimum lot sizes vary between 25 and 50 acres.
M	Municipal – intended for municipal buildings or related public use.

Source: Delaware Valley Regional Planning Commission

Map 3 - Composite Zoning Route 322 Land Use Strategies Study

- Zoning**
- Low Density Residential (R-1)
 - Medium Density Residential (R-2)
 - High Density/Multi-Family Residential (R-3)
 - Neighborhood/Regional Commercial (C-1)
 - Highway Commercial (C-2)
 - Limited/Light Industrial (LI)
 - Planned Business District (PBD)
 - Municipal (M)
 - Other

- Corridor Municipalities
- Study Area Major Highways
- Municipal Boundaries
- Rail

Source: DVRPC

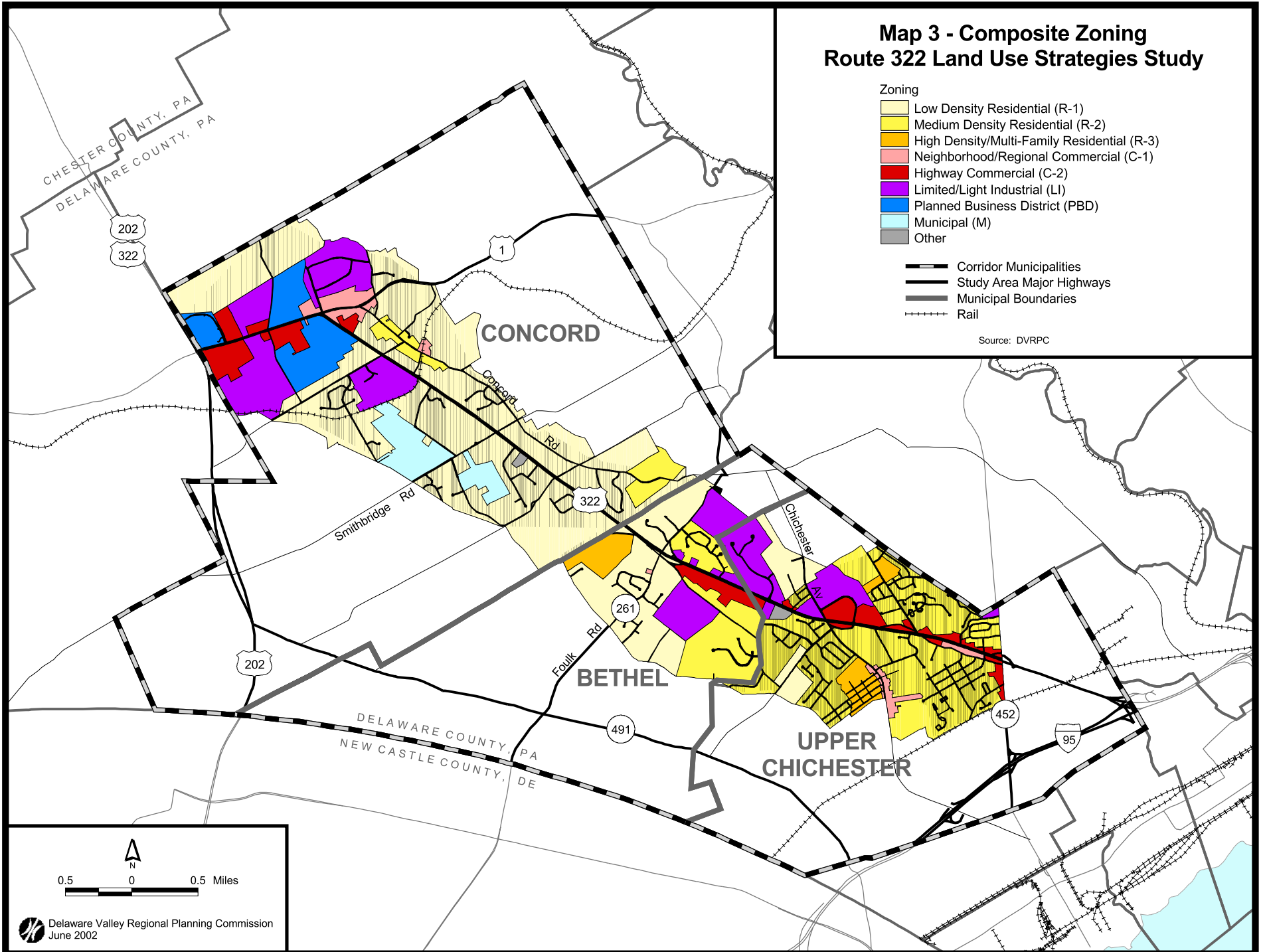


Table 5. Zoning District Conversion Table

Concord Zoning Classification	Generic Zone
R-2 and R-2D (low density single-family)	R-1
R-3 (medium density single-family)	R-2
R-MHP (mobile home park)	R-2
C-1 (convenience-type commercial)	C-1
C-2 (regional commercial)	C-2
LI (light industrial)	LI
PIP (planned industrial park)	PBD
PLO (planned lab-office)	PBD
PBP (planned business park)	PBD
SU (special use – swimming pool)	no classification
Bethel Zoning Classification	Generic Zone
R-1 (low density single-family)	R-1
R-3 (single-family planned unit developments)	R-2
R-4 (high density multi-family)	R-3
C-1 (neighborhood commercial)	C-1
C-2 (highway commercial)	C-2
LI-1 (limited industrial and office)	LI
LI-2 (limited industrial)	LI
Upper Chichester Zoning Classification	Generic Zone
R-1 (low density single-family)	R-1
R-2 (medium density single-family)	R-2
TH (medium density townhouse)	R-2
R-3 (high density single-family)	R-3
APT (high density apartments)	R-3
C-1 (local commercial)	C-1
C-2 (car-based commercial)	C-2
I-C (industrial and commercial)	LI
IND (industrial)	LI
PRC (planned retirement community)	no classification

Source: Delaware Valley Regional Planning Commission

These zoning classifications are convertible with municipal codes according to **Table 5**. This chart only includes those municipal zoning districts that are adjacent or near to Route 322.

Concord and Upper Chichester townships have floodplain conservation districts, which restrict development within the 100-year floodplains of creeks and streams. In addition, Upper Chichester Township has a steep slope conservation district, which restricts development on slopes of over 15%. These conservation districts are not converted into the generic zoning districts, but the effects of floodplains and slopes on development are discussed in the Natural Resources section later in this chapter.

In each of the townships, commercial zoning is more common directly along Route 322 than in the municipality as a whole. In Concord, most land along the highway is zoned for low-density residential use, but there are also large areas of highway commercial, light industrial and planned business park zoning, especially near the western end of the corridor. Most land near the corridor in Bethel Township is zoned for low-density or medium-density residential uses, although a strip of land along the highway was recently rezoned to highway commercial. In Upper Chichester, the dominant zoning along Route 322 is highway commercial; more than half of the land directly adjacent to the highway is zoned for large-scale commercial development. This pattern of zoning – high-intensity commercial uses along Route 322 – reflects market forces, pushing commercial development to high-traffic locations, and an effort on the part of the townships to concentrate their commercial uses along the highway.

Residential Uses

Very little land in the Route 322 corridor, and none directly adjacent to the highway, is zoned for high-density residential development. However, due to its existing higher density of development and its proximity to transportation networks, the immediate corridor of Route 322 is an appropriate location for higher-density housing.

Concord Township has directed most of its high-density residential development to the Route 202 corridor, especially near the Village of Elam in the southwest part of the municipality. The only opportunity for higher-density development near Route 322 in Concord Township is in the Mobile Home Development District (R-MHD), located on Concord Road near the boundary with Bethel Township. This area will be occupied by the Riviera at Concord, an age-restricted housing development, rather than a mobile home development.

In Bethel Township, one group of parcels located near the boundary with Concord is zoned for high-density residential use (R-4). Development here may occur at a maximum density of 6 units per acre, and a variety of dwelling types, from multi-family to single-family to townhouses, are permitted. A subdivision of about 200 units, named Northbrook, is currently under construction on this site.

Upper Chichester Township has more provisions for high-density housing than the other municipalities. No high-density residential zones are located directly along the highway, but both the High Density Residential District (R-3) and the Apartment District (APT) can be found nearby. The R-3

District allows up to 8 units per acre, with single-family semi-detached dwellings required. The APT District permits garden apartments of up to 12 units per acre or two-family dwellings at 8 units per acre.

Commercial and Industrial Uses

Approximately half of the Route 322 highway frontage is zoned for commercial, industrial, or other business uses. Of these, highway commercial is the most common, with over one-quarter of the land adjacent to Route 322 zoned for automobile-oriented commercial development. This must be recognized as an important function of Route 322 – not only is it a regional throughway, it serves as an important business center for the townships in the corridor.

In Concord Township, commercial and industrial zoning can be found at the western extreme of the corridor, where Route 322 and U.S. 1 join, although several other sites are being considered for rezoning. The Planned Business and Commercial District (C-2) is common in this part of the corridor, and requires development sites to be at least 3 acres in area. Within this, though, individual lots can be as small as 2,500 square feet. Less common is the Local Commercial District (C-1), which requires lots to be at least 6,500 square feet. In Concord Township, a fair amount of land zoned commercial, especially C-2, is still undeveloped.

Bethel Township has recently rezoned a portion of its frontage along Route 322 for General Business (C-2) use. However, no actual development has yet taken place on this land. Aside from this, Bethel Township has no commercial zoning in the immediate corridor of Route 322. Also, a few small parcels directly along the highway have been recently rezoned for industrial use. At a greater distance from the highway, but still in the study area, several other large undeveloped parcels are also zoned for industrial use.

Upper Chichester Township, which contains more than half of the commercial zoning in the study area, requires lots of at least one acre in its Highway Commercial District (C-2) and lots of at least 12,000 square feet for its more pedestrian-oriented Neighborhood Commercial District (C-1). In addition, some frontage along Route 322 is in the Industrial-Commercial District (I-C), which allows commercial uses on lots of at least 30,000 square feet. Very little land with commercial zoning in Upper Chichester is left undeveloped. An exception is the Chelsea Business Park and the Naamans Creek Center, where construction is still occurring.

Lot Widths and Building Setbacks

The width of a lot at the street line, also known as lot frontage, influences driveway placement. As lot sizes decrease and frontages narrow, driveways become more frequent, making the lot frontage provision an important tool in managing highway access. However, other innovative techniques, such as driveway sharing or marginal access roads, can allow good access patterns even in areas with narrow lot frontages.

Building setback provisions, also known as front yard requirements, create an additional impact on highway planning. Shallow setback requirements provide a limited area for future improvements to occur. Also, future road improvements may require acquisition of yard areas, and on lots with shallow setbacks, may not have adequate room. Within the corridor, the C-1 zoning district in Concord Township has the lowest setback requirements, of 20 feet. Besides this C-1 district in Concord Township, Bethel's R-3 district requires setbacks of between 30 and 40 feet, and Upper Chichester's R-2 district requires only 35-foot setbacks.

The study area municipalities measure setback distances from the right-of-way line rather than the centerline of the road. This form of measurement indirectly scales setbacks with the road function as the right-of-way width increases. The result is a setback requirement that affords adequate width for most highway improvements.

Despite this, businesses and homes in many zoning districts may be negatively impacted by any future improvements to the highway, and every effort should be made to ensure that future development is not situated too close to the highway.

Municipal Comprehensive Plans

Concord Township's comprehensive plan was revised most recently in June 2000, by Thomas Comitta Associates. This plan contains excellent recommendations for the future of Concord Township, including natural resource conservation, historic preservation, multi-municipal coordination, and the adoption of innovative planning techniques such as Transfer of Development Rights. Overall, the comprehensive plan is well-written, consistent with the Township's zoning ordinance, and corresponds with DVRPC's goals for the Route 322 corridor.

Bethel Township's comprehensive plan is currently being revised by Thomas J. O'Brien, Architect. The original comprehensive plan dates from the 1970s, and is being updated to adequately meet the needs of the Township's current and future residents.

Upper Chichester Township's comprehensive plan was most recently revised in 1990, and is therefore somewhat out of date. Also, the comprehensive plan is not entirely consistent with existing conditions or zoning ordinances. The Township should consider updating its comprehensive plan to more accurately reflect current conditions and local goals.

Appendix A contains proposed amendments to the comprehensive plans of each corridor municipality, dealing with land use and transportation linkages. Concord Township should add these amendments to its comprehensive plan, and Bethel and Upper Chichester townships should incorporate these amendments into their updated plans. Also, all three municipalities should consider using this land use strategies study as a resource for updating their comprehensive plans.

Regional and County Plans

Horizons 2025 is the regional long-range plan, adopted by DVRPC in April 2001. This plan provides an integrated land use and transportation vision for the region's growth and development through the year 2025, and supports policies such as revitalization in urban areas, growth management in developing suburban communities, and conservation of open space and farmland in rural areas.

In the Route 322 corridor, *Horizons 2025* encourages the preservation of farmland and open space, but also identifies the Painter's Crossroad area as a growth center, meaning that it will grow as a center of employment and commercial activity in the years to come. Thus, the *Horizons 2025* vision for the corridor has two aspects: intensification of development in areas with good service provision, such as sewer service and access to transportation, especially in Painter's Crossroads; and preservation of undeveloped land, especially farmland, that does not have sewer service and is not near transportation networks.

Delaware County has developed a draft of its countywide comprehensive plan, and anticipates plan adoption by January 2003. This plan contains several interrelated functional plans that address countywide issues such as land use, community facilities, transportation, utilities, historic resources, natural resources, and agricultural land. This plan can be a major asset in helping municipalities determine the character, timing, and location of development. The recommendations of the Route 322 Land Use Strategies Study are consistent with and help to implement the County's draft comprehensive plan.

Population and Housing

Land use change is often spurred by changes in population and housing. Population growth places strains on existing infrastructure, like roads, water and sewer systems, and schools. New housing construction usually consumes undeveloped land faster than the rate of population growth, and even communities with stagnant or declining populations often experience development of new land. Often, growth in the number of households in an area is a more accurate indicator of development trends than growth in population.

Key Conclusions

- Between 1990 and 2000, population growth in the study area exceeded DVRPC's population forecasts. As a whole, the populations of the three municipalities in the study area increased by nearly one-third during this decade. Over the same period, the number of housing units in the Route 322 corridor also increased by about one-third. The expansion of Route 322 may further accelerate this trend of rapid population and housing growth.
- Future increases in population and housing in the study area will directly affect land use, and some development will be necessary to accommodate this growth. If little is done to plan for this future growth, development may occur in an inefficient manner, using more land than necessary and making services more difficult to provide.
- The aging of the population of Delaware County will make it necessary for local governments to provide specialized services for the elderly beyond the level that they do now. This may be especially important in the Route 322 corridor, because of the number of recent age-restricted housing developments. Also, increases in the number of school-age children may have a significant impact on the services required of local governments, especially in new school construction in Bethel and Concord townships.
- Median housing sales prices in the three municipalities in the corridor in 1998 ranged from \$225,000 in Concord Township to \$118,000 in Upper Chichester Township. According to DVRPC's affordability analysis, most housing in Concord and Bethel townships is not affordable for a family with an income of \$55,000, the median in the region. With continual growth pressure, these municipalities will need to ensure that they are responsive to "fair share" housing objectives in future land use decisions.

Population

According to the 2000 Census, the populations of the three municipalities in the study area currently total over 34,000 people. As **Table 6** shows, the populations of these townships have been increasing rapidly over the past few decades, even as Delaware County as a whole has been stable. During the 1990s, the townships in the Route 322 corridor grew by over 9,000 people, a total increase of 37%. Over the same ten years, Delaware County increased only slightly in population. As this table also shows, according to DVRPC projections, these high growth rates will continue through 2025.

In the study area, population breakdown by age is also shifting. **Table 6** also shows municipal population for certain age groups, who are of particular importance in planning for public facility and infrastructure use. As of 2000, over 20% of the population is between the ages of 5 and 19 years,

corresponding to school age, which indicates a potential need for additional facilities such as schools and recreation areas. School enrollment projections, contained in the Infrastructure and Community Facilities section of this chapter, confirm this observation.

Also, while the three townships in the study area have a lower percentage of their population over age 65 than Delaware County as a whole, this special population is still significant. The entire County, and in fact the nation as a whole, has a higher proportion of its population over retirement age than ever before, and this proportion is rapidly increasing. In the municipalities in the study area, the addition of age-restricted housing developments, such as Fox Hill Farms and the Riviera at Concord development, reflects market demand to accommodate this rapidly growing segment of the population.

Table 6. Population Trends, 1990-2025

Municipality	Population			Change, 1990-2000		Change, 2000-2025		5 to 19 Years of Age		65+ Years of Age	
	1990	2000	2025	Absolute	As %	Absolute	As %	Population	As %	Population	As %
Bethel	3,330	6,421	9,540	3,091	93%	3,119	49%	1,618	25%	542	8%
Concord	6,933	11,239	16,920	4,306	62%	5,681	51%	2,174	22%	1,402	14%
Upper Chichester	15,004	16,842	20,350	1,838	12%	3,508	21%	3,292	20%	2,171	13%
Corridor Total	25,267	34,502	46,810	9,235	37%	12,308	36%	7,084	21%	4,115	12%
Delaware County	547,651	550,864	547,784	3,213	1%	-3,080	-1%	119,185	22%	85,669	16%

Source: Delaware Valley Regional Planning Commission, Census 2000

Housing

Across the United States, average household sizes have been declining for decades. Because of this trend, increases in housing units often occur at a faster rate than increases in population. As **Table 7** shows, the number of housing units in the Route 322 corridor, and in the County as a whole, has increased at a faster rate than population since 1980. The only exception to this rule is Bethel Township, which experienced a population increase of over 90% between 1990 and 2000 (see **Table 6**), accompanied by only a 75% increase in housing units.

As has been the trend across much of the Delaware Valley, limited availability of affordable housing is a continuing issue in the Route 322 corridor. Many moderate-income households, including service, retail, clerical and public sector

employees, are facing problems purchasing homes in the region. Much of the growth and prosperity in the municipalities in the study area may be impacted in the future by the lack of affordable housing. Population growth may be threatened by a lack of affordable housing, as younger first-time homebuyers will not be able to finance homes. For employers in the corridor, numerous negative results can arise, such as the need to pay disproportionately high wages to attract new employees, or other problems such as absenteeism, tardiness, and a higher rate of employee turnover, that may result from long commutes. Therefore, a lack of affordable housing may act as a direct threat to increased job growth along Route 322 by deterring prospective employers seeking to expand within the region. Other effects, such as increased air pollution and traffic levels, may follow a reliance on long-distance commuting.

Table 7. Change in Housing Units, 1980-2000

Municipality	Housing Units			Change, 1980-90		Change, 1990-2000	
	1980	1990	2000	Absolute	As %	Absolute	As %
Bethel	750	1,148	2,017	398	53%	869	75%
Concord	1,905	2,297	3,551	392	21%	1,254	55%
Upper Chichester	5,069	5,749	6,705	680	13%	956	17%
Corridor Total	7,724	9,194	12,273	1,470	19%	3,079	33%
Delaware County	201,335	211,024	216,978	9,689	5%	5,954	3%

Source: Delaware Valley Regional Planning Commission, Census 2000

Table 8. Affordable Housing Index

Municipalities	1998 Median Sales Price	Property Tax Rate, 2001	Minimum Income Required to Afford	Affordable to Median Income Family (Yes/No)
Bethel	\$205,438	2.33%	\$77,900	No
Concord	\$225,165	2.41%	\$85,100	No
Upper Chichester	\$118,400	3.11%	\$50,300	Yes

Source: Delaware Valley Regional Planning Commission, Philadelphia Inquirer

Table 8 shows the minimum income necessary to purchase the median-priced house in each of the municipalities in the study area. The median income in the region in 1998, calculated by adjusting 1990 income by changes in the consumer price index, was \$55,300. As this table shows, the median sales prices of houses in Bethel and Concord townships are considerably above the amount the average household can afford to pay. As a result, a shortage of affordable housing may be a problem in the Route 322 corridor.

The minimum income required to afford the median house is calculated using the following assumptions:

- the average buyer would provide a 16.8% down payment (average figure obtained from the National Association of Realtors) and mortgage the remainder;
- the buyer would obtain a 30-year fixed rate mortgage at an interest rate of 6.90% (the 1998 average interest rate in the Northeast, as obtained from Freddie Mac);
- additional costs would include private mortgage insurance (adding 0.25% to the interest rate), yearly hazard insurance (0.324% of the home's value), closing costs (2%

of the value) and property taxes (based on each individual municipality's tax rate); and,

- no more than 25% of the buyer's annual income could be spent on housing (including the mortgage payment, property taxes, hazard insurance and private mortgage insurance), as per the National Association of Realtors.



Figure 6. Toll Brothers, a luxury homebuilder, is involved in several developments in the corridor, including this one in Concord Township.

Fair Share Housing

A fair share analysis determines whether a municipality is providing its “fair share” of multi-family dwellings and to what degree existing regulations support multi-family development. The basic premise behind the fair share principle is that a local government is required to plan for and prepare land use regulations to meet the legitimate needs of all categories of people who may desire to live within its boundaries, particularly when a municipality is in the path of growth.



Figure 7. These attached dwellings in Upper Chichester Township are more affordable than most new homes in the corridor.

The analysis of fair share uses the test established by the Commonwealth Court case of Surrick v. Upper Providence Township, 476 Pa. 182, 382 A.2d 105 (1977). This test consists of a three-tier analysis based on the following questions:

1. Is the municipality a logical place for growth and development?
2. Is the municipality a developed or developing community?
3. What is the potential for development of multi-family units and is the amount of land set aside for multi-family development disproportionately small in relation to population growth pressures?

Based on municipal population projections, the availability of various housing types and the regional highway network, the corridor will continue to grow and develop. Given the fact that there is land still available to accommodate potential growth, the municipalities in the corridor, especially Concord and Bethel townships, would be considered developing communities. Further, as development continues to spread westward in Delaware County, the potential for development of multi-family units becomes even greater.

Multi-family dwellings are accommodated in all municipalities, either near the corridor or elsewhere, through high-density zoning districts, as discussed in the Land Use section of this chapter. This may indicate that municipalities are meeting their “fair share” of such units. However, as growth pressures continue, municipalities within the corridor may need to consider provisions for additional high-density housing.

Economic Resources

Local economic conditions have significant impacts on land use and transportation. For example, while a local shopping center provides important tax revenue and offers corridor residents a nearby place to shop, it can also place strains on existing water and sewer infrastructure, and can induce traffic congestion. Likewise, attracting new employment can be economically beneficial for a municipality, but also increases the pressure for residential development nearby, and may contribute to peak-hour traffic congestion. Thus, it is important that land use and transportation plans correspond with local economic conditions and economic development efforts.

Key Conclusions

- While growth in employment in the study area is economically beneficial to corridor municipalities, it is important to consider the location of this employment, and to develop a strategy for encouraging it to grow in sustainable, positive patterns.
- Employment in the Route 322 corridor is growing rapidly, but most residents continue to be employed outside of their home municipalities. More corridor residents are employed in the State of Delaware than in the City of Philadelphia, but transportation systems continue to be oriented towards Philadelphia and eastern Delaware County.
- Employment growth and increases in commercial uses will continue to increase in the corridor in the near future, as population growth has exceeded the growth of employment and shopping opportunities.



Figure 8. The newly-constructed Shoppes at Brinton Lake, located along Route 1 / Route 322 in Concord Township, are upscale, specialty retail shops.

Employment

According to DVRPC estimates, about 9,100 people were employed in Bethel, Concord, and Upper Chichester townships in 2000. As **Table 9** shows, between 1990 and 2000, these three municipalities added nearly 1,600 jobs, an increase of 21%, while Delaware County as a whole expanded its employment by less than 3%.

Between 2000 and 2025, this dissimilarity in growth rates is expected to continue. These three townships are projected to experience an employment growth of 4,800 jobs, an increase of over 50%. The majority of this growth will occur in Concord Township, but employment in Bethel Township will increase at a faster rate. Over the same amount of time, Delaware County is projected to experience only a 14% rate of employment growth.

Despite this high rate of growth, these municipalities have few jobs compared to their population, when measured against Delaware County as a whole. Overall, less than 4% of the County's total employment is located in these townships. Although employment is increasing at a faster rate than population in the Route 322 corridor, if current trends continue, they will remain primarily residential in the near future. Concord Township, with about 4,900 jobs in 2000 and 9,900 people, is an important exception to this general observation.








Major employers in the Route 322 corridor are shown on **Map 4**. The largest employer in the corridor is State Farm Insurance, with about 1,000 employees, located at Painter's Crossroads. A business of similar size, Applied Card Systems, is also planning to relocate to the Painter's Crossroads area in the near future.

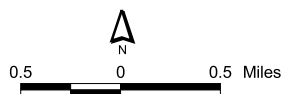
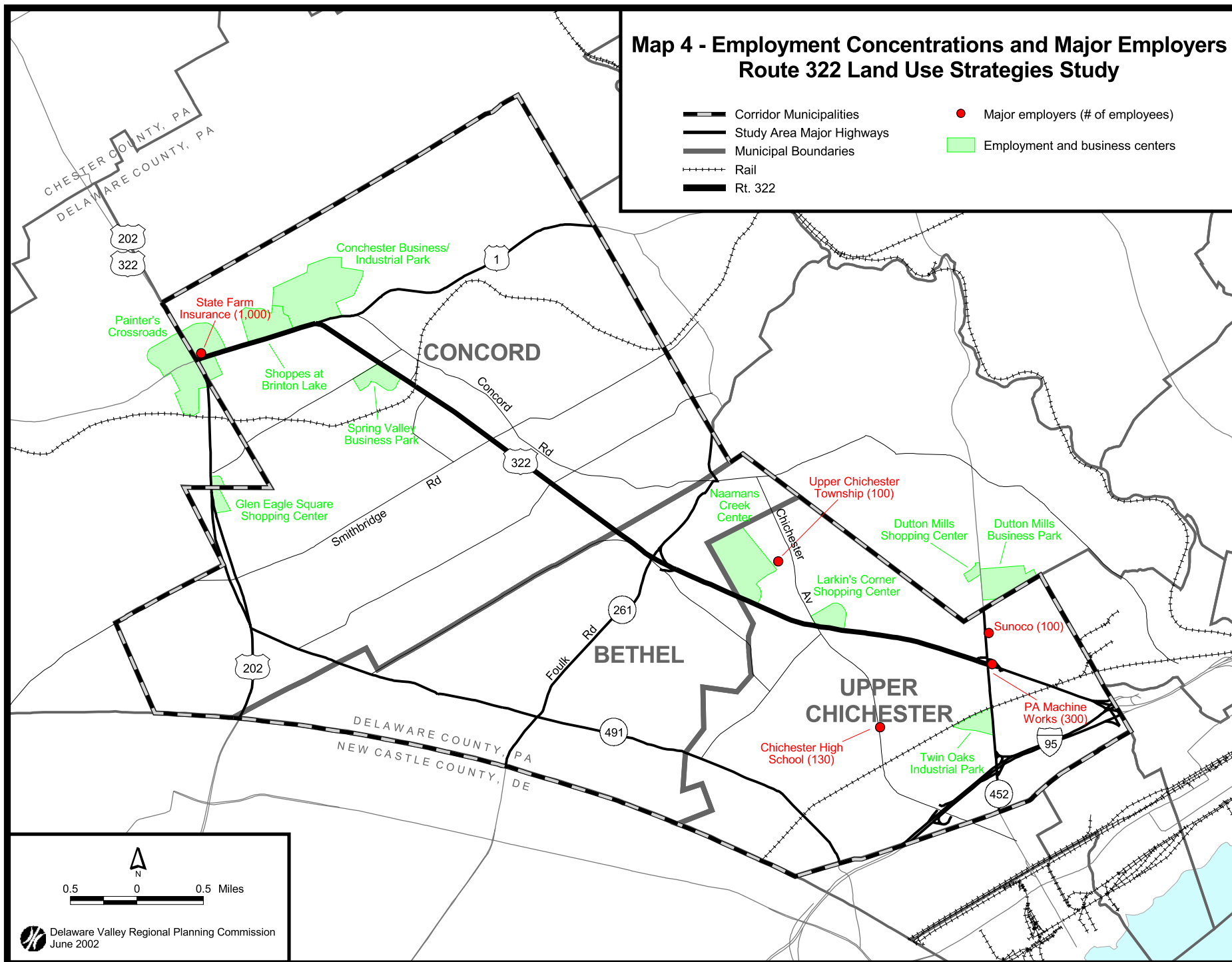
Table 9. Employment, 1990-2025

Municipality	Employment			Change, 1990-2000		Change, 2000-2025		Population 2000	Population Per Job, 2000
	1990	2000	2025	Absolute	As %	Absolute	As %		
Bethel	909	1,060	1,850	151	17%	790	75%	6,421	6.1
Concord	3,974	4,930	8,020	956	24%	3,090	63%	9,933	2.0
Upper Chichester	2,657	3,140	4,060	483	18%	920	29%	16,842	5.4
Corridor Total	7,540	9,130	13,930	1,590	21%	4,800	53%	33,196	3.6
Delaware County	230,459	236,330	269,890	5,871	3%	33,560	14%	550,864	2.3

Source: Delaware Valley Regional Planning Commission

Map 4 - Employment Concentrations and Major Employers Route 322 Land Use Strategies Study

-  Corridor Municipalities
-  Study Area Major Highways
-  Municipal Boundaries
-  Rail
-  Rt. 322
-  Major employers (# of employees)
-  Employment and business centers



Although there are employment opportunities in each of the municipalities in the Route 322 corridor, only about 10% of corridor residents worked in the municipality in which they lived in 1990. Of the remainder, most worked within Delaware County. However, a substantial proportion of the residents of Bethel, Concord, and Upper Chichester townships – 17% in 1990 – worked in the State of Delaware, mostly in Wilmington. By contrast, only about 11% of corridor residents worked in Philadelphia.

These employment patterns, especially the concentration of residents who work in Delaware, are important to consider when planning transportation improvements, such as bus routes. In this part of the region, cross-state coordination is especially necessary to effectively plan for land use and transportation.

Economic Resources

Route 322 forms an important part of the economic base of the corridor municipalities. In Bethel, it is the only location where intensive commercial development is permitted; in Concord and Upper Chichester, other highways such as Route 202 and Route 491 are equally important. This economic importance can be seen in the concentration of commercial zoning and land use along the highway, as described in the Land Use section of this chapter.

As the corridor's relatively low level of commercial land use implies, most corridor residents continue to rely on shopping opportunities outside the corridor. Only two major shopping centers, Larkin's Corner Shopping Center and the recently built Shoppes at Brinton Lake, are large enough to be locally competitive shopping attractions. Of these, the more upscale Shoppes at Brinton Lake, which features gourmet grocery stores, high-end clothing stores, and other specialty shops, has potential to become more regionally significant.

Other shopping areas, such as the Dutton Mill Shopping Center and Glen Eagle Square, are short distances from Route 322, and regional malls are located at Granite Run in Delaware County and further south in the State of Delaware. Because of this lack of nearby shopping, continued commercial development pressure along Route 322 is likely, especially in the western part of the corridor.

Natural Resources

Much of the Route 322 corridor's recent growth has been spurred by its attractive rural character and scenic landscapes. Ironically, if current and future growth is not well managed, sprawling development may destroy the attractive features that drew many current residents and businesses to locate in the corridor. Because of this, any land use strategy should consider environmental constraints. This will allow communities to develop future recommendations that are sensitive to potential impacts on some of the area's most valuable resources, and ensure the greatest conservation of these resources possible.

Key Conclusions

- Despite the rapid development that has occurred in the corridor in recent years, it still contains many important natural resources that influence the amount and type of development that can take place. Municipalities need to ensure that natural resources and the ability of the land to sustain additional residential and commercial uses are taken into consideration when determining appropriate locations for new development.
- The underlying geology, hydrology, and soil conditions within the corridor limit development in several areas. In addition, some slope conditions in the corridor also require development controls, as the demand for development on steeply sloped land can be expected to escalate as growth continues.

- A large portion of land along Route 322 has prime agricultural soils. However, much of this land has already been consumed by development. The same qualities that make the study area suitable for agriculture – shallow slopes and good drainage, for example – also make it attractive for more intense development.
- The planned expansion of Route 322 will increase development pressure, especially along the highway. Thus, it is important to put measures in place to protect valuable natural resources before this expansion occurs.



Figure 9. Farmland in the corridor is rapidly disappearing, and the few farms that are left, like the Marshall Farm shown in the distance in this photograph, are experiencing increasing development pressure.

Hydrology and Slopes

The three stream systems that drain the Route 322 corridor are Chester Creek, Naamans Creek, and Marcus Hook Creek, which all flow into the Delaware River. The largest of these is Chester Creek, one of the major stream systems in Delaware County, with a 45-square-mile watershed. Among the corridor municipalities, Concord Township is almost entirely within the Chester Creek watershed, Upper Chichester is within the Naamans Creek watershed, and Bethel is split between them.

Each of these stream systems is associated with a significant floodplain, which is the low-lying area adjacent to a creek which is most prone to overflow during periods of heavy precipitation. If left untouched, these areas provide a natural buffer for nearby development during floods. However, in many places, previous development has occurred in or near the floodplain, and much of the floodplain is occupied by residential, commercial, or industrial uses. Future problems due to flooding are possible in many of these vulnerable low-lying areas.

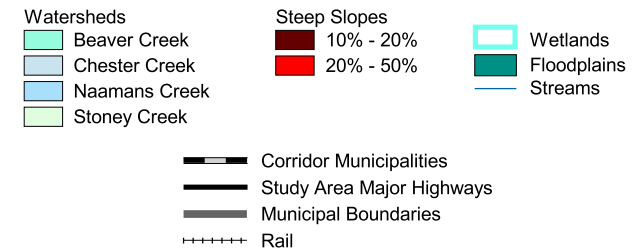
Wetlands are also important hydrological resources. Wetlands offer a great deal of biodiversity that no other type of terrain can completely replicate. Farm ponds, reservoirs, and upland wetlands, such as swamps and marshes, are important ground water recharge areas, and regulate stream flow by collecting water during major rains and augmenting flow during low water conditions. Also, these collection areas reduce sediment loads in surface water and are a major asset to wildlife.

A number of wetlands exist in the municipalities in the study area, primarily adjacent to the major stream systems in the corridor. More information concerning wetlands in the corridor, and the effect of the highway expansion on these resources, can be found in PennDOT's Environmental Assessment for the Route 322 improvement project.

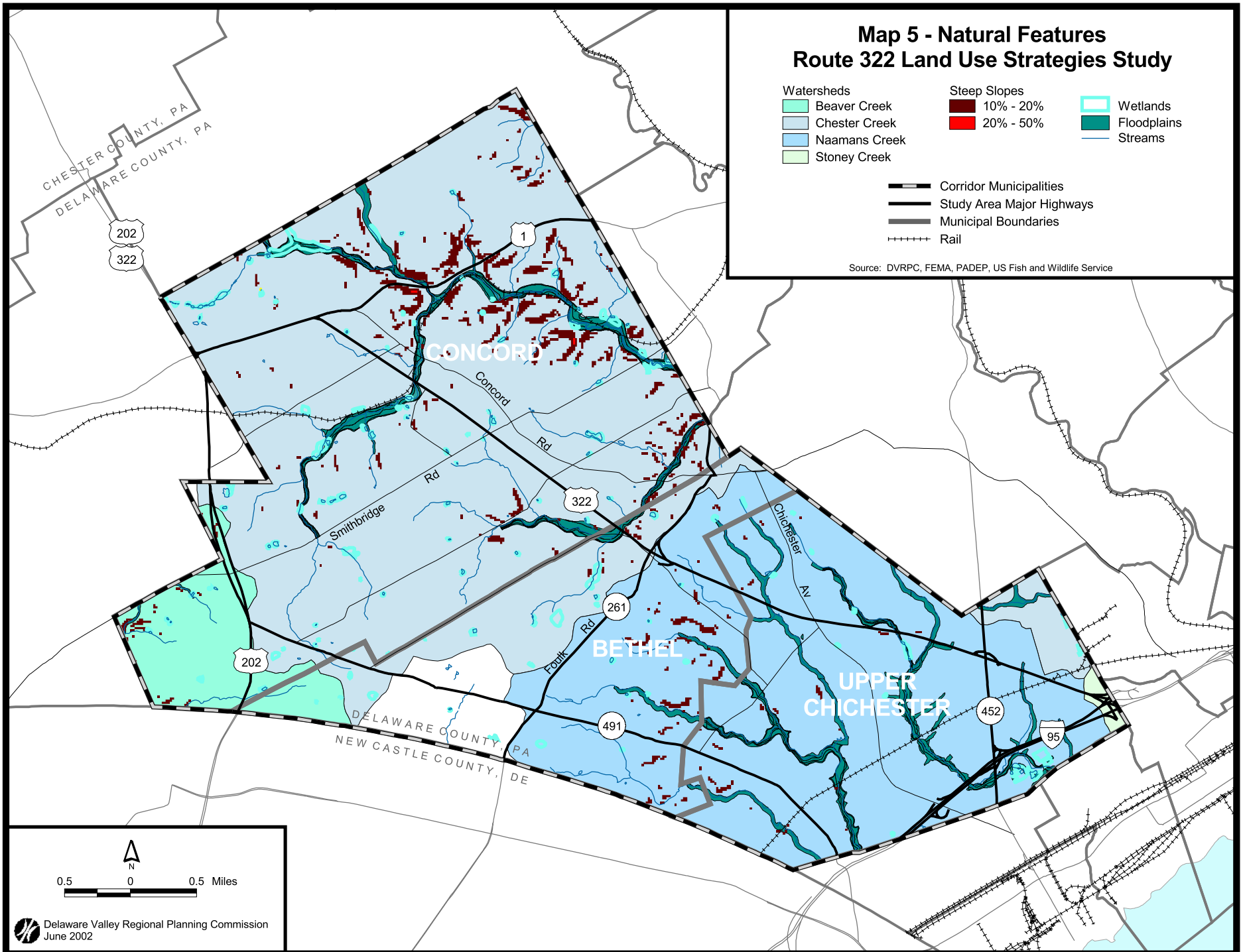
The terrain of the corridor is relatively consistent throughout its length, although the western end of the corridor, approaching the Piedmont, is more hilly. The eastern end of the corridor, in Upper Chichester Township, is within the Atlantic Coastal Plain, and the landscape is rather flat. However, some moderate and steep slopes can be found within the corridor. Most of these are near the main branch of Chester Creek as it passes through Concord Township, and are generally outside the immediate corridor of Route 322.

Limiting development on steep and moderate slopes can help municipalities limit erosion and stormwater problems, and also reduce infrastructure costs. Slopes, watersheds, and other hydrological features are shown on **Map 5**.

Map 5 - Natural Features Route 322 Land Use Strategies Study



Source: DVRPC, FEMA, PADEP, US Fish and Wildlife Service



Soils and Farmland

Another important natural feature to consider is the distribution of soils, which often help to form land use patterns. For example, certain types of soil are favorable for farming, others are suitable for large-scale development, and others are able to support rare plant species. According to the Pittsburgh Geological Society, most soil found in the corridor is of the Chester-Glenelg soil association. This soil type is fairly deep, with well-developed mineral levels, and good water holding capacity.

Although the quality of the soil in the study area varies, the United States Department of Agriculture's Soil Conservation Service ranks the majority of Chester-Glenelg soils as Capability Class I, or prime farmland. Preservation of prime farmland is an important goal in many parts of the region, for several reasons. In addition to producing food, agricultural areas can serve as resources for conservation and environmental protection, providing good conditions for groundwater recharge, water quality management, flood control, and air quality management. Large expanses of farmland can provide visual relief from the congestion and the growing suburbanization of the corridor. Also, the agricultural background of the corridor makes farmland a key piece of local identity.

However, with the rapid development in the corridor, the number of acres still in active use as farmland has been

greatly reduced over the past several decades. The factors that make land desirable for agricultural usage also make it ideal for development. Accordingly, commercial and residential developers looking for accessible, level, and well-drained sites typically target farmlands. Along the corridor, growth in these types of developments has typically come at the expense of farmlands, eroding an important sector of the local community. The Land Use section of this chapter provides some statistics on the loss of farmland in the study area.

Woodlands and Other Open Space Resources

To this day, many areas within the study area remain sites of natural woodlands. These areas are environments for important plant and animal communities, contribute to the aesthetic value of the area by providing open spaces between tracts of developed land, and also control floods and erosion, especially when found near stream valleys and on steep slopes where erosion potential is high. The study area contains some of the largest concentrations of wooded areas in Delaware County. Clayton Park, a County-owned park, and the Newlin Mills complex in Concord Township include significant wooded areas. As growth continues in the corridor, the amount of pressure brought to bear on unprotected woodlands will increase as the amount of available land diminishes.

Cultural and Historic Resources

The Route 322 corridor has a rich history, reflected in its land use patterns, transportation network, and general character. Several structures of recognized national significance can be found in the study area, although countless others have been compromised by rapid recent development. This section examines the history of the local area, reviews the development of the local road network, provides a brief description of major historic resources in the study area, and explains the importance of historic preservation efforts along the Route 322 corridor.

Key Conclusions

- A large number of cultural and historical resources currently exist within the corridor, both of National Register and local historic value. Local regulations are necessary to protect key resources, preserving sense of place and quality of life in the corridor. Any cultural or historic preservation effort on the part of communities within the corridor should address not only structures, but the entire cultural and historic landscape.
- Several parts of the study area, particularly Concordville and Chelsea, have considerable historical integrity, having maintained their significance as cultural centers of the past. However, recent patterns of land use change have made strengthening these historic centers difficult, and their importance will diminish if current development practices continue to be followed.

Early Settlement

Delaware County, originally part of Chester County, was first settled by Swedes along the Delaware River in 1643. The area, after a brief period of Dutch control, was acquired by the English in the mid-seventeenth century. William Penn was formally granted the area in 1682, and was responsible for the formal layout of the original three counties in Pennsylvania. About a century later, in 1789, the eastern portion of Chester County split off, forming Delaware County.

At the time Delaware County was created, it was primarily agricultural. Much of the land remained unsettled, and most cleared land was used for farming. Many farmers specialized in growing wheat or corn as commercial crops, or raised livestock, supplying Philadelphia and Wilmington with milk and meat. Villages and small towns developed in a number of places, providing a center of community and commerce for nearby farmers and other residents.

During the nineteenth and early twentieth centuries, the landscape of what is now the Route 322 corridor began to change. The area became more accessible due to the construction of new railroads and the growing availability of automobiles. Also, many landowners in the corridor began to specialize in dairy farming, as quick access to Philadelphia and other cities became easier with improved transportation, and other farmers subdivided their farms into low-density suburban tracts. In addition, industrial and urban growth in Chester City and its surroundings, as well as garnet mining in

Bethel Township, caused further changes in land use and community character.

Several existing villages in the corridor date back several centuries. The most prominent of these villages is Concordville, which lies at the junction of Concord Road and Baltimore Pike (Route 1). This village was founded during the eighteenth century, and was based around the Friends Meetinghouse located there. The village expanded during the late nineteenth century, fueled by traffic on Concord Road and Baltimore Pike. Other villages in the corridor include Ward, located just south of Concordville, which grew up around a railroad station, and Chelsea, located in northern Bethel Township.

While few historic villages survive, historic resources are found throughout the Route 322 corridor. Some of the more important historic resources in the corridor are shown on **Map 6**. This map shows historic resources of national, state, or local significance, including three National Register districts in Concord Township: Concordville, the Newlin Mill complex, and the Ivy Mill complex. Also, it highlights historic properties that were identified in PennDOT's Environmental Assessment as potentially impacted properties.

Map 6 is not meant to provide a complete list of historic resources in the corridor, but to demonstrate that historic properties can be found throughout each of the three townships in the study area. More detailed and more comprehensive maps, as well as descriptions of each of the properties shown, can be found in the files of the Delaware County Planning Department's Preservation section.

Road Network

Route 322 is a relatively new highway, designed originally as an east-west connection between Atlantic City, New Jersey and Cleveland, Ohio. The existing highway was designed and built in two sections at the close of World War II. The first section, from Foulk Road (Route 261) to the west and connecting with Route 1, was constructed in 1945. The second, from Foulk Road to the east connecting to what would become Interstate 95, was constructed in 1948. Much of the actual roadway has changed little since its initial construction.

Although Route 322 is a recent addition, an older road network served the area for centuries. Concord Road was constructed during the 1680s, connecting farmers in the western part of the county with markets and ports in Chester. Somewhat later, a road connecting Wilmington and West Chester (now Route 202) was constructed, and soon became more heavily used than Concord Road. Other early roads, such as Baltimore Pike (now Route 1), Smithbridge Road, Spring Valley Road, and Foulk Road, have provided links to these major thoroughfares since the early eighteenth century, facilitating trade and travel between the Brandywine Valley and nearby cities. Local roads also played a role in the British capture of Philadelphia after their victory in the Battle of Brandywine, with Concord Road providing access to Chester City and Philadelphia beyond.

Map 6 - Historic Resources Route 322 Land Use Strategies Study

Historic Resources

★ Potentially Impacted Properties

★ Historic Sites

⊞ Historic Districts

Historic Villages

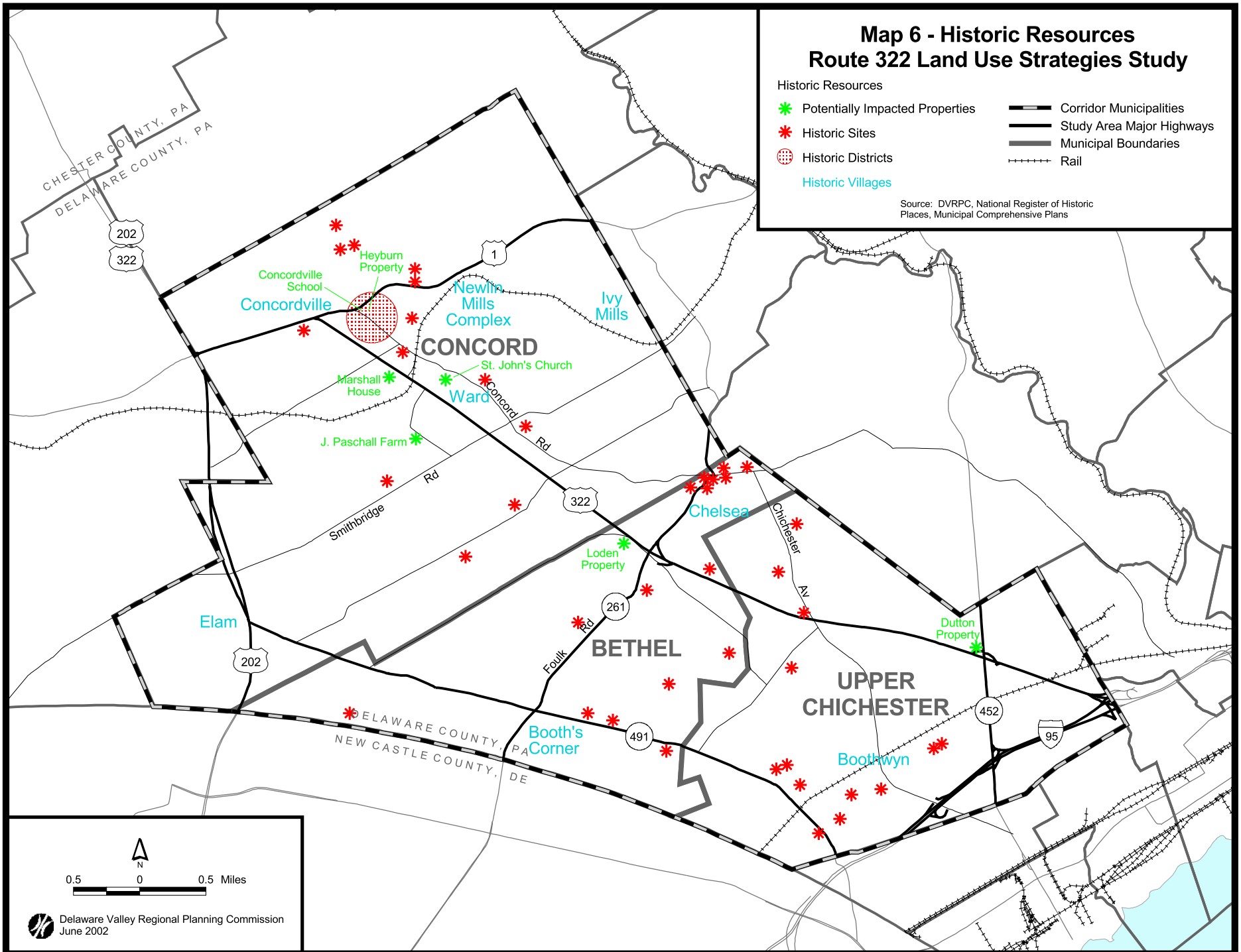
Corridor Municipalities

Study Area Major Highways

Municipal Boundaries

Rail

Source: DVRPC, National Register of Historic Places, Municipal Comprehensive Plans



Historic Preservation

While some historic resources in the corridor have been destroyed or compromised by development, many others have been preserved, due to the efforts of citizen groups or local officials. Continuing efforts on the part of both these groups are necessary to continue to preserve local historic and cultural resources in the Route 322 corridor.

Protection of historic resources is codified in the ordinances of some of the townships in the corridor. For example, Bethel Township's demolition ordinance requires that any building that is proposed to be demolished must first be examined for historic significance. Concord Township has a Historic Preservation ordinance which requires special review by the Historical Commission for projects affecting historic properties. On the County level, the Preservation section of the Delaware County Planning Department is one of the most active and effective in the region.

In addition to government-based preservation efforts, some local non-profit groups have also been active in protecting the built environment and cultural landscape of the three townships in the study area. For example, the Bethel Historic Preservation Society has been quite active in the Route 322 corridor, advocating effectively for stronger preservation measures in both Bethel and Upper Chichester townships. Another organization, the Concord Historical Society, is also actively involved in preservation activities in the corridor. In addition, countless individual citizens have become involved in preservation efforts.



Figure 10. The cemetery in the foreground is associated with St. John's Episcopal Church in Concord Township, one of the corridor's important historic resources.

Community Facilities and Infrastructure Systems

Community facilities and physical infrastructure systems are important determinants of the rate and shape of future growth. Physical infrastructure, such as sewage and water facilities and stormwater management systems, has a key role in determining the location, density, and type of growth that can occur. Community facilities, such as neighborhood parks, larger recreation areas, and schools, are important facets of quality of life, and play a large part in determining how much growth an area can attract, as well as the character of this new growth. This section identifies the physical infrastructure systems and the community facilities that currently exist in the Route 322 corridor, and identifies present and future needs that have not been addressed.

Key Conclusions

- A large majority of corridor residents rely on on-lot sewage disposal systems, which become less appropriate as density increases. As development in the corridor continues, an increasing number of homes and businesses will have to rely on public sewer and water systems.
- The demand for park and recreation areas will increase as the population of the corridor increases. Already, existing recreation areas may not be sufficient to serve the population, and the disappearance of farmland and woodland – often informal recreation areas – will also create the need for formalized parks and other facilities.

- The Garnet Valley School District is expected to increase enrollment by more than 70% over the next ten years. Both Concord and Bethel townships will need to consider additional facilities such as new schools and recreation areas.

Sewer Facilities

Act 537, the Pennsylvania Sewage Facilities Act of 1966, as amended, requires that each municipality have an official Sewage Facilities Plan, typically referred to as the “537 Plan”. The purpose of the plan is to identify future sewage disposal needs based on anticipated development and to set forth policies for meeting those needs.

Most residents of the corridor rely on on-lot systems, which are individual systems built to accommodate a single dwelling unit, as the primary method for disposal of sewage. Although these systems are an effective method for the disposal of sewage, they are less appropriate in higher-density settings. Thus, as growth occurs, municipalities in the corridor may need to plan for other sewage disposal options, based on anticipated growth and future facility needs. In dense areas, public systems, which are centralized systems for sewage collection and treatment are often used. These are commonly referred to as public sewers, and can either be publicly or privately owned, though most are public facilities. Related to public systems are package plants, which are smaller facilities that usually serve only one development or commercial facility.

Water Facilities

The systems supplying water to the corridor vary significantly in size and ownership. Among public sources, the Chester Water Authority supplies water to most of the corridor, but other water companies, such as the Bethel Water Company and the West Mattson Water Company, also serve a portion of the municipalities in the corridor. The majority of residences in the study area are currently dependent on individual private wells as the main source of potable (drinking) water. Avoiding contamination of these ground water sources is crucial, and will require the municipalities in the study area to consider the impacts that any new development will have on ground water sources. Also, as densities increase, ground water sources may become depleted, and it may be necessary for some residents and businesses to switch to public water sources. Thus, the shape of new development may be largely dictated by the service areas of water and sewer authorities. The coverage of public sewer and water systems in the corridor is shown on **Map 7**.

Stormwater Management

Stormwater management practices are governed by Act 167, the Pennsylvania Stormwater Management Act of 1978. A stormwater management plan for Chester Creek is expected to be completed by summer 2002, and municipalities are encouraged, as interim measures, to integrate certain best management practices into municipal ordinances. These practices include requiring unimpeded flow of natural water courses, draining low points along streets, intercepting stormwater run-off at appropriate points, and accommodating

expected volumes of stormwater run-off within subdivisions and other land developments. Because small subdivisions are generally not subject to the same level of review in terms of stormwater runoff as the larger proposals, in areas where development occurs on single lots rather than in large subdivisions, stormwater management will continue to be a challenge, even with an effective Act 167 Plan.

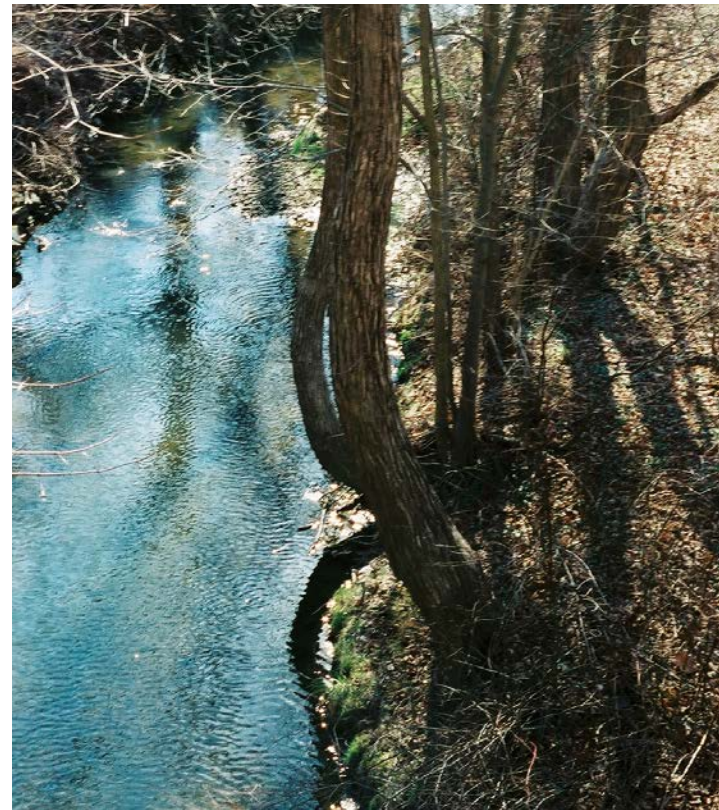


Figure 11. A stormwater management plan is underway for Chester Creek, shown in this photograph near where it is crossed by Concord Road.

Map 7 - Water and Sewer Service Route 322 Land Use Strategies Study

Water Service Company

Bethel Water Co.

Chester Water Authority

West Mattson Co.

Sewer Service

Sewer Service Area

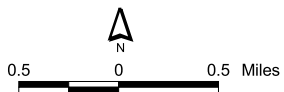
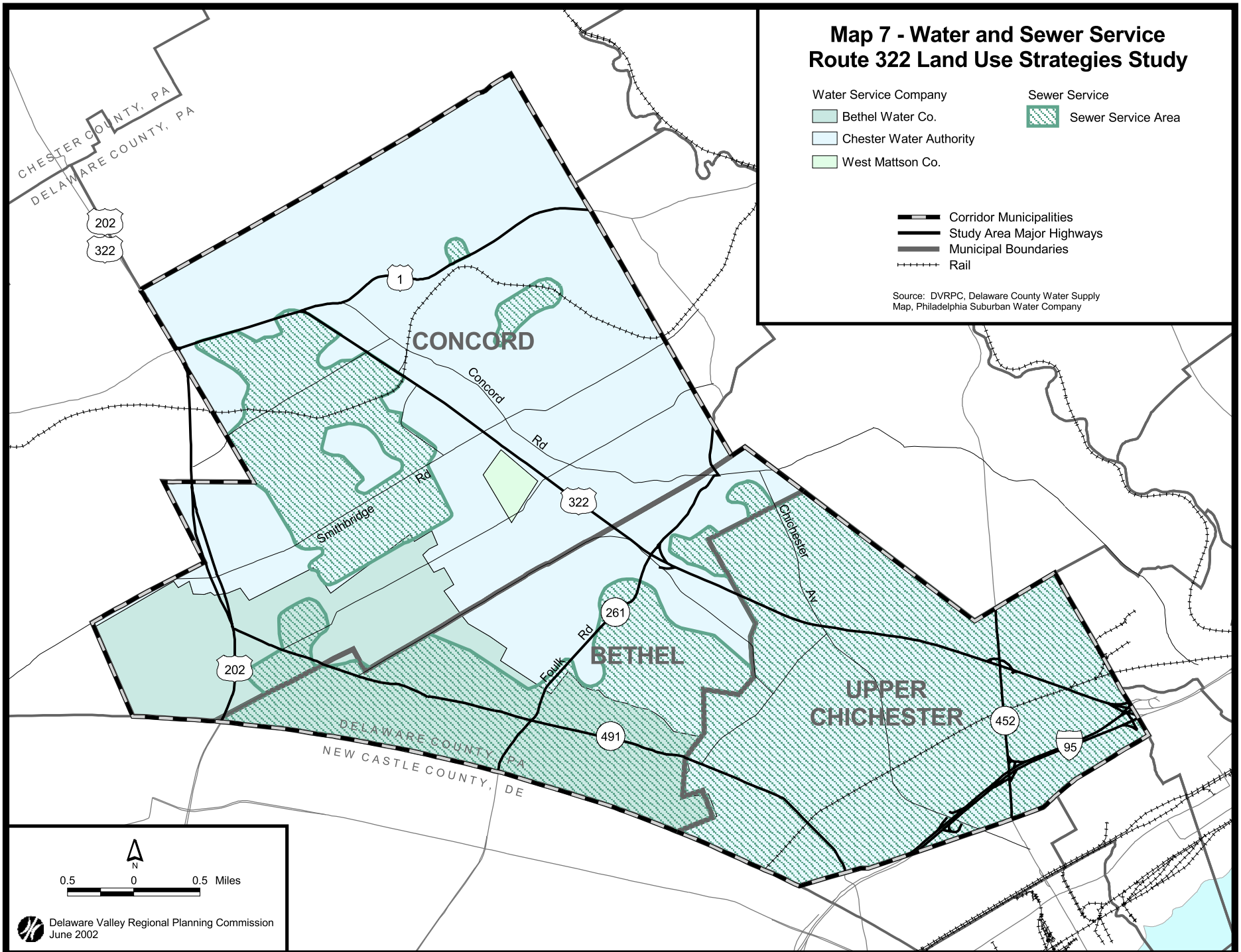
Corridor Municipalities

Study Area Major Highways

Municipal Boundaries

Rail

Source: DVRPC, Delaware County Water Supply
Map, Philadelphia Suburban Water Company



Recreation Facilities

Very few parks exist in the three municipalities that make up the study area. According to the 1995 land use analysis, only 365 acres in these three townships were devoted to recreation uses. These 365 acres include school sports fields, so the acreage of public parks is even less than this. Public parks and other public facilities are shown on **Map 8**.

The only park in the three townships that is operated above the municipal level is the county-owned Clayton Park, which has most of its land in Concord Township, with a small portion extending into Bethel. Clayton Park is about 170 acres, the largest county-owned park in Delaware County, and contains a nine-hole golf course, several sports fields, and woodlands with a hiking trail. Another major recreation area in Concord Township is the Newlin property, located east of Route 322, which includes passive recreation areas and some historic points of interest. Other recreation areas in Concord include the Kid's Dream Playground, a six-acre park located a distance west of Route 322, and the Concord Country Club, a private golf club in the northwest corner of the Township.

Upper Chichester Township has more neighborhood parks than Concord Township, but they are generally smaller. The largest park adjoins the Upper Chichester Township Municipal Building, and totals slightly less than 40 acres. No other parks exceed five acres, although there is a fairly large open space owned by the St. Martin's Episcopal Church that can be used publicly. In all, there are six named neighborhood parks scattered throughout the township, but none of them exceed

three acres. Bethel Township has no municipal parks, and only a small portion of the county-owned Clayton Park.






It is important for the municipalities in the study area to address this shortage of recreation areas. Historically, Concord and Bethel Townships have had little need for publicly owned recreation areas, with large areas of open farmland or forests, and therefore do not contain many neighborhood parks. However, as their densities of development increase and open spaces are replaced by development, more parks will be needed to serve the recreation needs of this increased population. If corridor municipalities plan for their future recreation needs now, designating parkland can be cheaper and easier than if they wait until more development occurs.



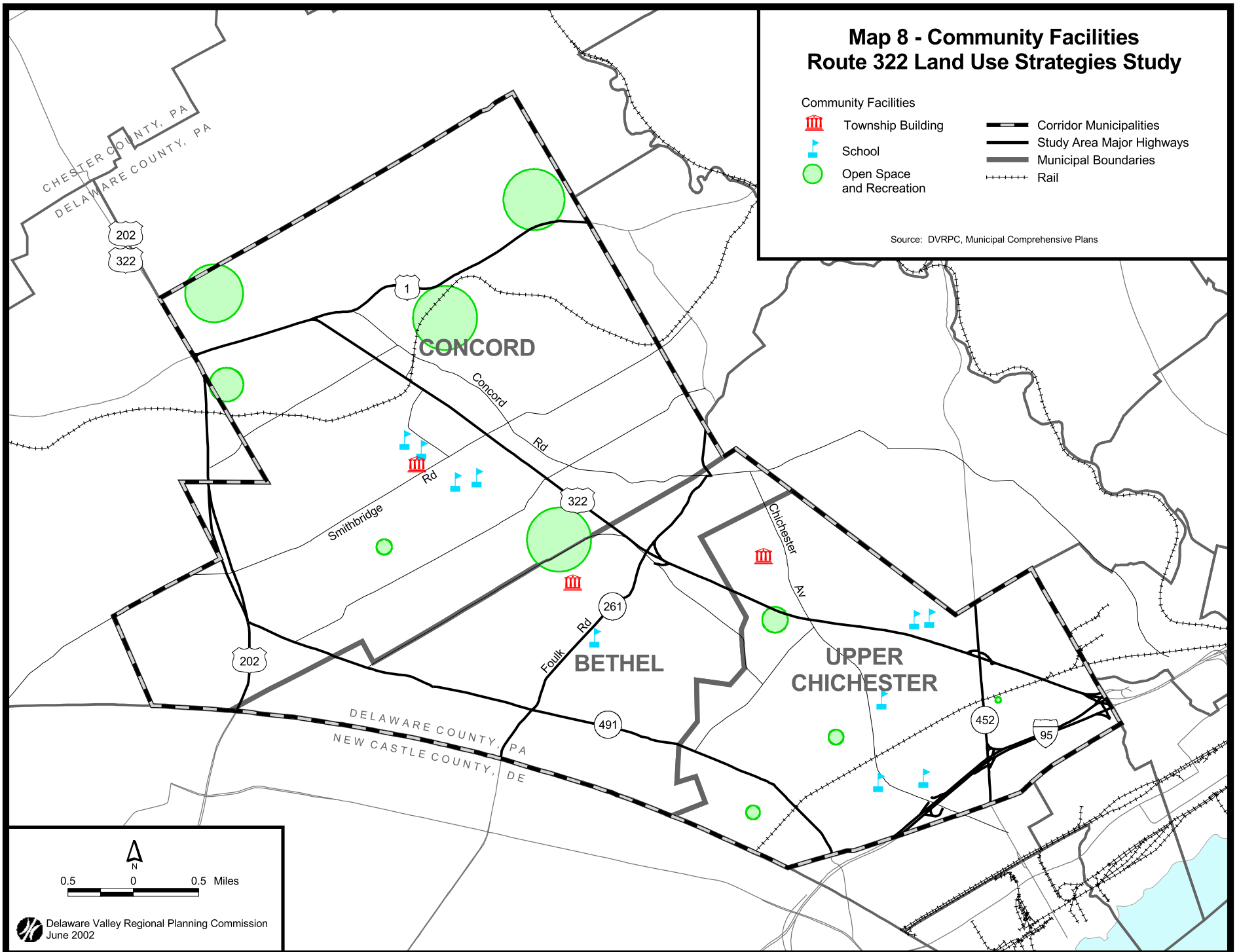
Figure 12. Clayton Park, located along Route 322 in Concord and Bethel Townships, is the largest county-owned park in Delaware County.

Map 8 - Community Facilities Route 322 Land Use Strategies Study

Community Facilities

- | | |
|---|---|
|  Township Building |  Corridor Municipalities |
|  School |  Study Area Major Highways |
|  Open Space and Recreation |  Municipal Boundaries |
| |  Rail |

Source: DVRPC, Municipal Comprehensive Plans



Schools

The three municipalities in the study area are served by two school districts. The first of these, Chichester School District, covers Upper Chichester Township, Lower Chichester Township, and the boroughs of Trainer and Marcus Hook. Most school district facilities, with the exception of Linwood and Marcus Hook Elementary Schools, are contained within Upper Chichester Township. Garnet Valley School District serves Concord and Bethel townships, as well as nearby Chester Heights Borough, and all of these schools are located within either Concord or Bethel townships.

According to projections by the Pennsylvania Department of Education, shown in **Table 10**, future trends for the enrollment of these school districts are quite different. Chichester is expected to remain at approximately its current numbers, while Garnet Valley is projected to increase its enrollment by over 70% over just the next decade.



Figure 13. Hilltop Elementary School, in Upper Chichester Township, is part of the Chichester School District.

Table 10. School District Enrollments, 1999-2000 to 2009-10

School District	Projected Enrollment by School Year			Change, 1999-2000 to 2009-2010	
	1999-2000	2004-05	2009-10	Absolute	As %
Chichester	3,844	3,646	3,785	-59	-2%
Garnet Valley	3,207	4,563	5,514	2,307	72%

Source: Pennsylvania Department of Education

Transportation

The implications of any proposed highway modifications must be examined in the context of the existing circulation network. Important aspects of the transportation system in the Route 322 corridor include characteristics of the local road system, traffic levels, level of service analysis, nearby land use conditions, and availability of alternative forms of transportation.

Key Conclusions

- The demand for transportation services and facilities is affected by land use, and land use change is affected by the impacts of transportation services and facilities. These issues must be addressed through coordination at state, regional, county and local levels.
- Route 322 currently serves two conflicting functions, as it is used as a regional highway and also as the commercial center for many of the municipalities through which it passes. Projected future growth in population and employment in the study area, as well as the zoning of adjacent parcels, indicate that the use of the highway as a local road will probably increase.
- Congestion on Route 322 decreases quality of life for local residents and through travelers. Congestion is especially problematic at intersections which serve major employment centers, and on the segments of Route 322 where access to nearby businesses is not controlled.
- Land use patterns in the corridor are generally low-density, with single-family detached dwellings and strip commercial uses, creating a car-oriented landscape. Because of these land use patterns, most transportation alternatives to the automobile, such as bus service, walking, or biking, are not viable.



Figure 14. Congestion is a problem throughout the Route 322 corridor. Intersections like this one, at Cherry Tree Road in Upper Chichester Township, are especially congested during peak hours.

Composition of the Roadway Network

Transportation systems in the study area have evolved over centuries. Some roads within the study area, such as Concord Road and Bethel Road, have been used since colonial times, serving as important links between farming settlements and major cities. Over the past few decades, these have been replaced in importance by an automobile-based highway system. The following roads are the major transportation corridors within the study area:

- Route 322 is a relatively old highway, known commonly as Conchester Highway in the study area. It connects Atlantic City, New Jersey and Cleveland, Ohio, running the length of Pennsylvania. Just beyond the eastern end of the study area, the highway meets I-95. Route 322 is a two-lane highway for most of its length in the study area, but has been expanded to four lanes in the eastern part of the study area, approaching its intersection with Route 452. It also widens to four lanes when it merges with Route 1, in the western part of the study area.
- Route 202 runs north-south, generally forming a ring around the city of Philadelphia, and connecting points north and east with the State of Delaware. In the portion of Route 202 that is in the study area, the highway serves traffic traveling between West Chester and Delaware. This highway forms the western boundary of the study area. Route 322 runs concurrently with Route 202 as it extends north and west beyond the study area.
- Route 1 (Baltimore Pike) runs generally east-west, connecting Philadelphia and Bucks County with Baltimore and other points south. It is a four lane divided highway, classified as a primary arterial. For a segment of this road in Concord Township, it is coterminous with Route 322, extending east from the intersection with Route 202 for about one mile.
- Route 452 (Market Street) marks the eastern edge of the study area. Route 452 runs north-south, connecting I-95 in Upper Chichester Township with Route 1 in Middletown Township, and has approximately the same level of traffic as Route 322 in the study area.

There are also connecting roads that generally parallel Route 322. From Route 1 to Route 261, Concord Road runs directly alongside Route 322, with numerous small roads like Spring Valley Road, Station Road, and Mattson Road connecting the two. East of Route 261, Concord Road turns slightly north, still approximately paralleling Route 322 and eventually intersecting with Route 452. Also, Bethel Road parallels and occasionally intersects Route 322 through Bethel and Upper Chichester townships, but carries less traffic than the other roads described here.

Functional Classifications

For planning and design purposes, highways are classified by function. **Map 9** shows Highway Functional Classifications, traffic counts, and traffic projections. Although highways have two functions, to provide mobility and to provide local access, there is an incompatibility between these two functions. Mobility requires high speeds for sustained travel while local access requires low speeds for frequent turns. The Federal Highway Administration, in conjunction with PennDOT, has instituted a nation-wide classification system known as the National Highway Functional Classification. Four different categories of roads are used in this system:

Principal Arterials serve statewide and interstate travel, linking major activity centers in the urbanized area. In addition, this class of facilities serves significant intra-region travel, such as between central business districts and outlying residential areas or between major suburban centers. Along principal arterials, local access is subordinate to mobility. Principal arterials in the study area are Route 202 (Wilmington-West Chester Pike), Route 1 (Baltimore Pike), Route 322 (Conchester Highway), and Route 452 (Market Street). Additionally, I-95 is classified as a primary arterial highway.

Minor Arterials interconnect and augment the principal arterial system. These roads carry trips of moderate length, and place more emphasis on local access than the principal arterial and therefore carry less traffic. Roads of this classification accommodate intra-community travel but do not penetrate neighborhoods. Minor arterials in the study area are

Concord Road, Route 261 (Foulk Road), and Chichester Avenue.

Collectors provide both local access and traffic circulation within residential neighborhoods and commercial and industrial areas. The collector system may penetrate residential neighborhoods, distributing trips from arterials to their ultimate destinations. Also, these roads collect traffic from local streets and channel it onto the arterial system. Collectors carry less traffic than arterials but may carry a minor amount of through traffic. The collectors in the study area include Brinton Lake Road, Spring Valley Road, Smith Bridge Road, Garnet Mine Road, Bethel Road, Larkin Road, and Cherry Tree Road.

Local roads permit direct access to abutting land uses and connections to the other categories of roads. They carry very low volumes and offer the lowest level of mobility, often deliberately discouraging through traffic. There are many local roads in the study area; basically every road not mentioned above is classified as a local road.

Traffic Volumes and Patterns

The segment of Route 322 with the highest levels of traffic is at the western end of the corridor, where Route 322 and Route 1 are coterminous. Over the remainder of the corridor, traffic levels are fairly constant, although traffic counts in the eastern part of the corridor – between Route 261 and Route 452 – are higher than traffic counts between Route 1 and Route 261.

Highway Functional Classification

- Principal Arterial - Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local

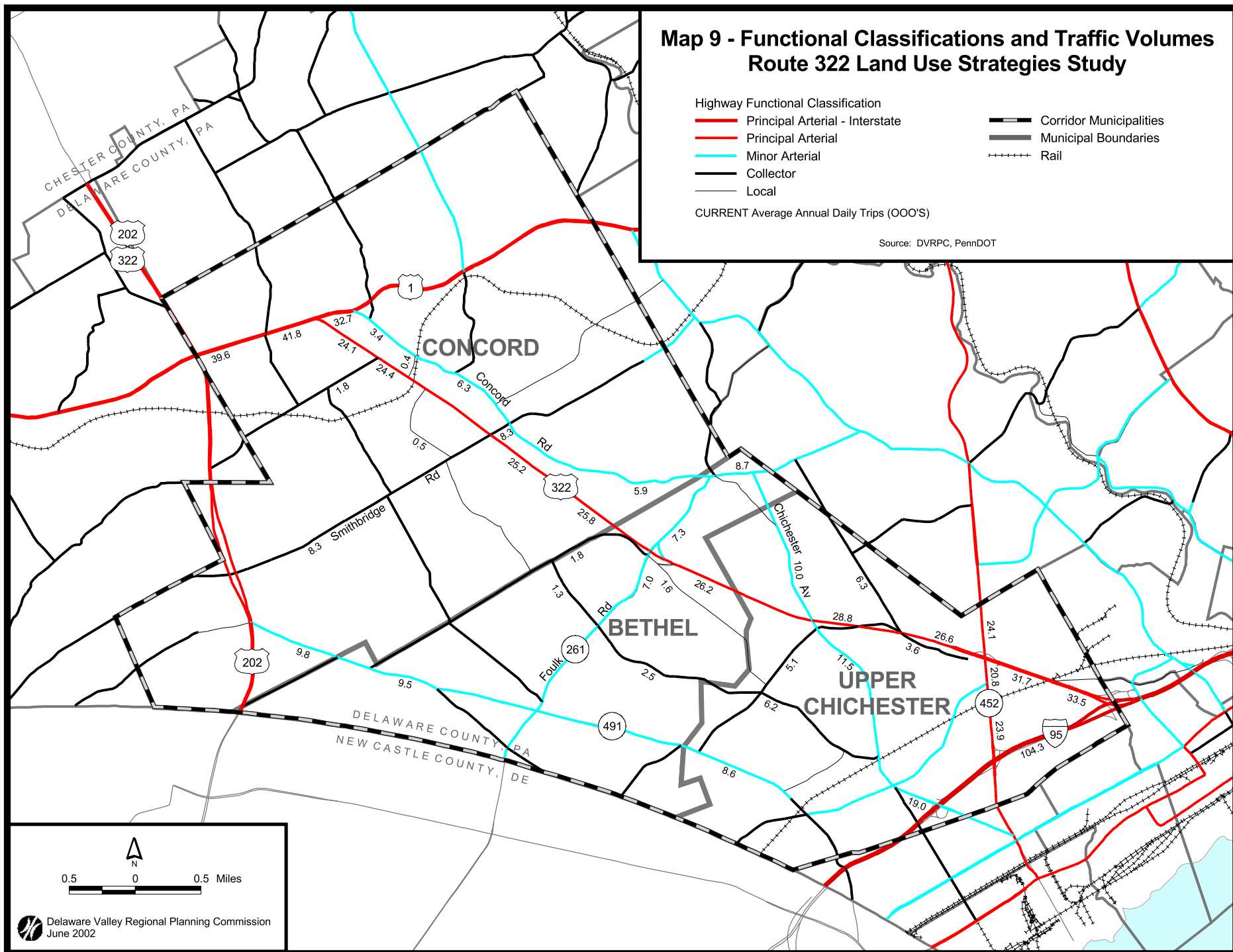
Corridor Municipalities

Municipal Boundaries

Rail

CURRENT Average Annual Daily Trips (OOO'S)

Source: DVRPC, PennDOT



If no construction occurs, according to DVRPC projections, average daily traffic volume on Route 322 is expected to grow by 25% to 30% by 2026. The segments of Route 322 with the greatest increase in traffic will be those on the western end of the corridor, where Route 322 and Route 1 run concurrently. Throughout the rest of the corridor, slightly lower increases are predicted.

Among roads that intersect Route 322, the highest traffic volumes are on Route 202 and Route 1, with Route 452 also carrying a large amount of traffic. Parallel roads generally receive less traffic than Route 322, with only Concord Road and Naamans Creek Road carrying substantial traffic loads. According to DVRPC projections, traffic on roads intersecting or paralleling Route 322 will increase by about 30% by 2026.

Based on an analysis of morning and afternoon peak traffic volumes on Route 322, a majority of the west and eastbound traffic in the study area is through traffic. However, Route 322 is also used for access to nearby business parks and major employers. During morning and evening rush hours, large numbers of vehicles makes turns at Spring Valley Road, Creek Parkway, Chelsea Parkway, Cherry Tree Road, and Route 452. Cumulatively, these vehicles add significant volume to Route 322 during the morning and evening peak travel periods.

Level of Service

Level of service (LOS) characterizes operational conditions within a transportation corridor and motorists' perceptions of how it is functioning. Individual levels of service are determined by such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for several types of transportation facilities, such as road segments or intersections. Facilities are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and is affected by factors such as roadway conditions, traffic conditions and control conditions.

Levels of service along Route 322 are generally good at most intersections. Of the twelve major intersections studied in a Level of Service Analysis by Alfred Benesch & Company in 2000, six were given LOS A/A, meaning that traffic flowed smoothly at both morning and evening rush hours. Three other intersections were judged to have LOS C or better during both rush hours. However, the intersections of Route 322 with Route 1 and with Cherry Tree Road were given LOS F/F, demonstrating that conditions were very bad during both morning and evening rush hours. The Spring Valley Road intersection was judged to have LOS B/E, meaning that morning rush hour traffic was generally not bad, but that the intersection was not able to easily handle the amount of traffic it received during the evening rush hour.

Roadway Conditions and Characteristics

As the Land Use section of this chapter has covered in depth, the municipalities in the Route 322 corridor have relatively low levels of development for Delaware County, although Upper Chichester is considerably more developed than Bethel and Concord. The land adjacent to the highway has higher levels of development than land located at a greater distance, and has an especially high concentration of commercial development. The most intense uses in the corridor are found at its extremes, near to Painter's Crossroads on the western end of the corridor, and in Upper Chichester Township on its eastern end.

The transportation system of Route 322 is directly affected by the land uses surrounding it. Although it is not a major carrier of regional travelers, Route 322 still receives a large amount of through traffic, since it is a principal connector between I-95 and the Route 1 and Route 202 corridors. This function, as a regional throughway, is often at odds with the large number of commercial and residential developments that have appeared on its sides. With numerous access points to the highway, caused by the strip development of adjacent land, Route 322's functions as a local road and as a regional road are often in conflict.

One of the major concerns along the Route 322 corridor is access management. In a number of places, driveways from private residences feed directly to the highway, an inappropriate condition for a regional transportation route. In addition, in Upper Chichester Township, commercial development along the highway also restricts its use as a

regional throughway. The combination of high-speed traffic in large volumes and numerous intersections and access points can lead to serious problems, such as congestion and safety concerns.









In addition, land use patterns in the study area have forced residents and travelers to rely on the automobile. Because of the low-density development pattern, the large distances between complementary uses, and even the design of new office and commercial centers along the highway, no other form of transportation is convenient. Public transit, bicycling or walking have been inhibited by land use patterns from becoming viable means of transportation within the corridor.

Alternative Modes of Transportation

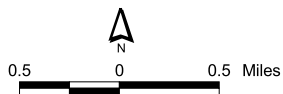
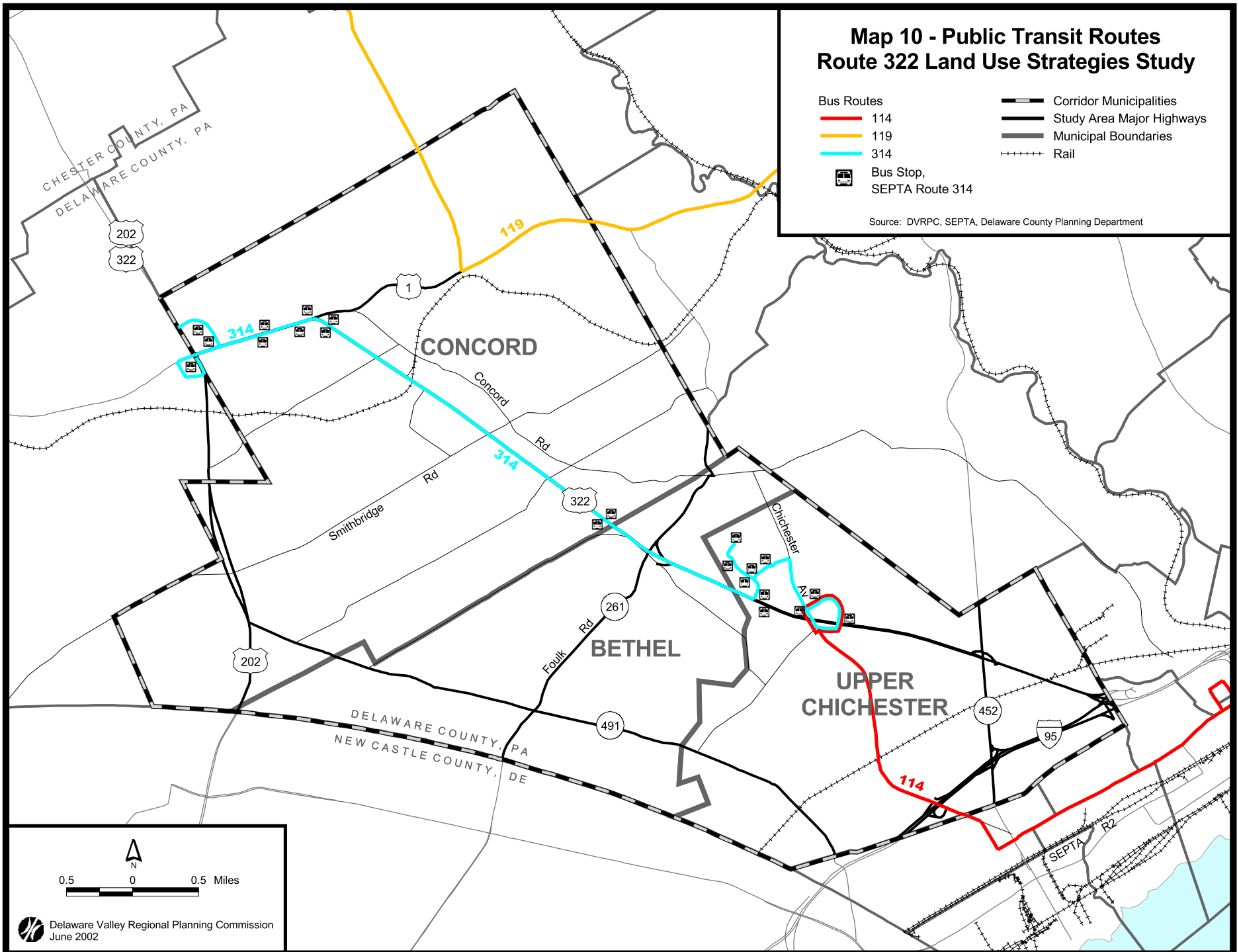
There are few transportation alternatives to the automobile along Route 322. As **Map 10** shows, there is some bus service along the highway. Most of the corridor is served by SEPTA bus route 314, which is operated by Keystone Quality Transport Company. This bus route stops at major employment locations and shopping centers along Route 322, and continues north to the West Chester area. Bus route 314 meets bus route 114, which serves Darby and Chester City, at the Larkins Corner Shopping Center, in Upper Chichester.

While bus route 314 does connect important employment centers along Route 322, it runs infrequently. The bus does not run on weekends, and makes limited trips during weekdays, mostly during morning and evening rush hours. Ridership is very low, but the route is supported and heavily subsidized by Delaware County and Chester County.

Map 10 - Public Transit Routes **Route 322 Land Use Strategies Study**

- | | |
|--|---|
| Bus Routes |  Corridor Municipalities |
|  114 |  Study Area Major Highways |
|  119 |  Municipal Boundaries |
|  314 |  Rail |
|  Bus Stop,
SEPTA Route 314 | |

Source: DVRPC, SEPTA, Delaware County Planning Department



No rail service in the study area exists, although trains used to serve this area; the remnants of the Octoraro Branch train tracks run through Concord Township, passing under Route 322 near Station Road. Also, a former train station can be found near the intersection of Concord Road and Station Road.

While the study area is directly not served by rail, SEPTA's R2 regional rail line runs through Marcus Hook and Chester City, to the east of the study area. Corridor residents can access this rail service by driving down Route 322 to one of these stations, taking SEPTA's bus route 114 to the Chester Transportation Center, or traveling down Route 202 or Route 261 to Wilmington.



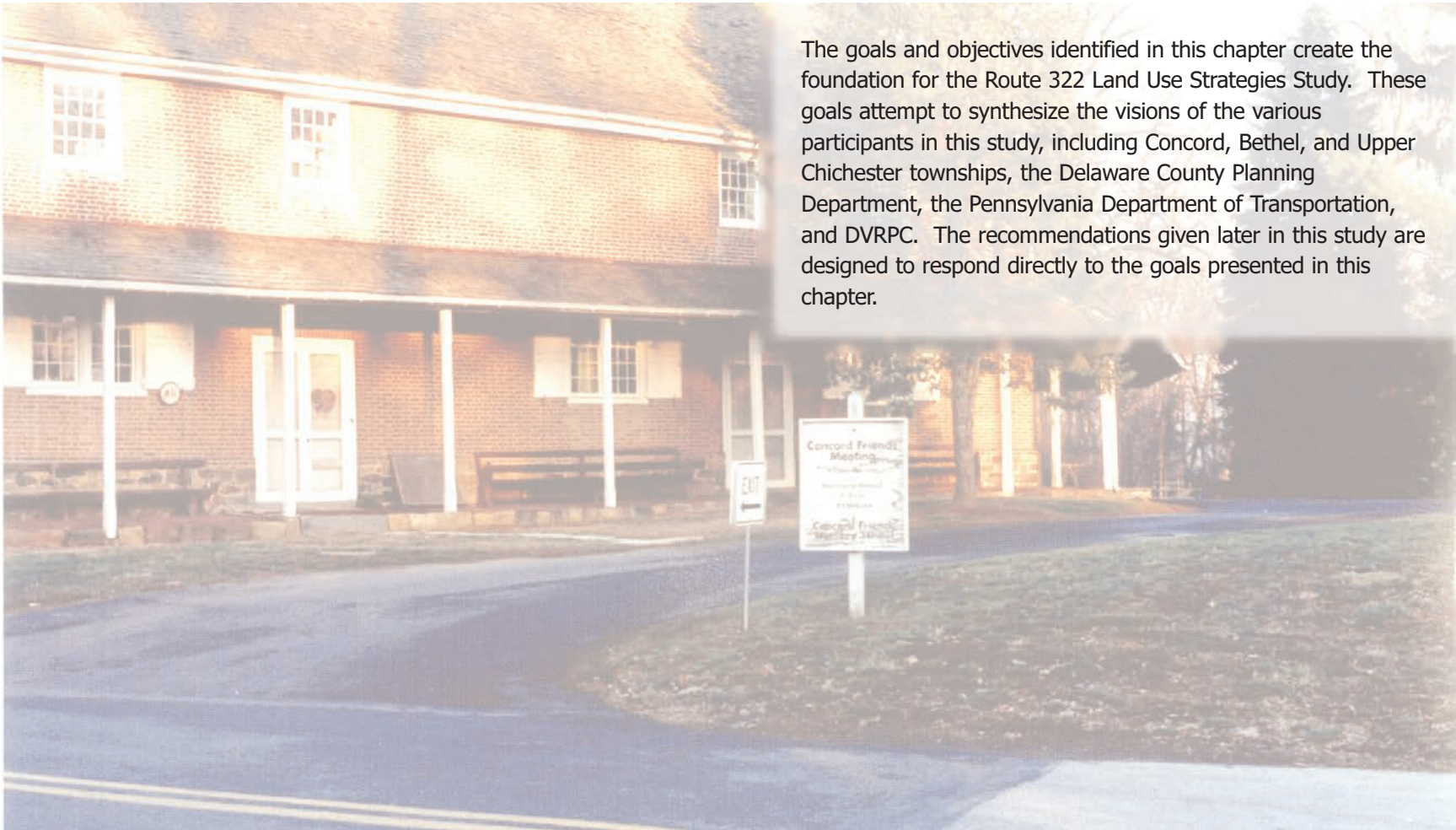
Figure 15. The Octoraro train station was once located on this site. Passenger service last operated during the 1950s. The bushes on the right of the photograph cover the remnants of the track.

The future of rail service on the Octoraro line remains unclear. If service is not restored, Concord Township plans to construct a bicycle trail in the rail line's right-of-way. It may also be possible for both rail service to be restored and a bicycle trail to be constructed, as long as there is adequate separation to ensure safety. In either case, local officials will need to coordinate with SEPTA, who owns the rail right-of-way.

Bicycle and Pedestrian Facilities

Currently, bicycling and walking are not viable as means of transportation along the Route 322 corridor. It does not have bike lanes, and even if it did, the highway's use by high-speed, through traffic would probably make biking unsafe. Walking is also difficult because of the lack of sidewalks or other pedestrian facilities; walking beside Route 322 is unpleasant and even unsafe over much of its length. In addition, the low-density pattern of land use along the highway creates distances too large to be conducive to walking.

Level of service standards can be adapted to apply to bicycle facilities. According to an analysis of bicycle level of service along the corridor conducted by DVRPC, Route 322 has LOS F, the lowest possible, indicating that bicycling along this highway is virtually impossible. Bicycle facilities on parallel routes were also poor; Concord Road had LOS D, and Bethel Road varied between C and D for most of its length.



The goals and objectives identified in this chapter create the foundation for the Route 322 Land Use Strategies Study. These goals attempt to synthesize the visions of the various participants in this study, including Concord, Bethel, and Upper Chichester townships, the Delaware County Planning Department, the Pennsylvania Department of Transportation, and DVRPC. The recommendations given later in this study are designed to respond directly to the goals presented in this chapter.

An important goal of this study is to balance the transportation improvements planned by PennDOT with the preservation of important resources in the Route 322 corridor, such as the historic character of Concordville.

Land Use

Address the land use issues that will be created by the improvement of Route 322 now, before the expansion of the highway takes place. Adopt measures to protect valuable natural resources before the expansion of Route 322, which will increase development pressure and make protection of this land more difficult.

Balance the use of Route 322 as a commercial center for the municipalities in the corridor with its use as a throughway for regional travel. Allow Route 322 to continue to be used as a center of economic activity for the municipalities in the corridor, and ensure that the economic function of the highway is considered when planning improvements to it.

Avoid strip commercial development along Route 322, and encourage mixed-use development, incorporating retail, commercial, and high-density residential uses, especially near transit stops and the interchanges of major roadways. Permit innovative building patterns such as transit-oriented development and other center-based developments, especially near transit stops and major roadway interchanges.

Ensure that land use regulations are inspired by a coherent vision for the future of the corridor, and improve consistency between the zoning ordinances and comprehensive plans of the municipalities in the study area.

Preserve farmland and natural features wherever possible, and direct growth to areas where appropriate infrastructure, such as sewer, water, and transportation networks, is in place.

Population and Housing

Address the rapid growth in population that will continue in the corridor into the near future, accelerated by the expansion of Route 322, and explore ways to enable this population growth to match the local vision for the future of the corridor.

Provide a variety of housing types to serve the needs of a growing and diversifying population, and actively promote the provision of affordable housing in the corridor by allowing a wide range of housing types, and price levels, and by facilitating the construction of multi-family housing in appropriate locations.

Economic Resources

Promote a diversified economic base for the corridor, encouraging retail and light industrial activities in appropriate areas, to provide financial stability to the townships in the corridor and sources of employment and shopping areas for corridor residents.

Natural Resources

Preserve, manage and enhance the corridor's remaining natural resources, recognizing that the municipalities in the study area contain natural resources of significance to the entire County.

Preserve prime farmland and valuable agricultural soils, while acknowledging that land directly along Route 322 is subject to considerable development pressure.

Historic and Cultural Resources

Protect the cultural and historic character of the corridor by identifying important cultural and historic resources, including not only structures but the entire cultural and historic landscape, and actively working for their preservation.

Maintain or enhance the character of existing neighborhoods, especially in historic villages like Concordville, and promote historic tourism in appropriate areas throughout the corridor.

Community Facilities and Infrastructure Systems

Address the demands that population growth in the corridor will place on community facilities and physical infrastructure, and ensure that adequate sewer and water service, park and recreation areas, and school facilities are available for all existing and future corridor residents.

Circulation

Provide a safe and efficient circulation system, both vehicle and pedestrian, that can maximize safety, minimize congestion, and establish a beneficial relationship between land use and local circulation patterns throughout the corridor.

Ensure that the expansion of Route 322 by PennDOT occurs in a way that is consistent with the long-range vision of the municipalities in the corridor, and ensure that the use of Route 322 as a regional throughway is not compromised by its concurrent use as a commercial center for the townships in the corridor.

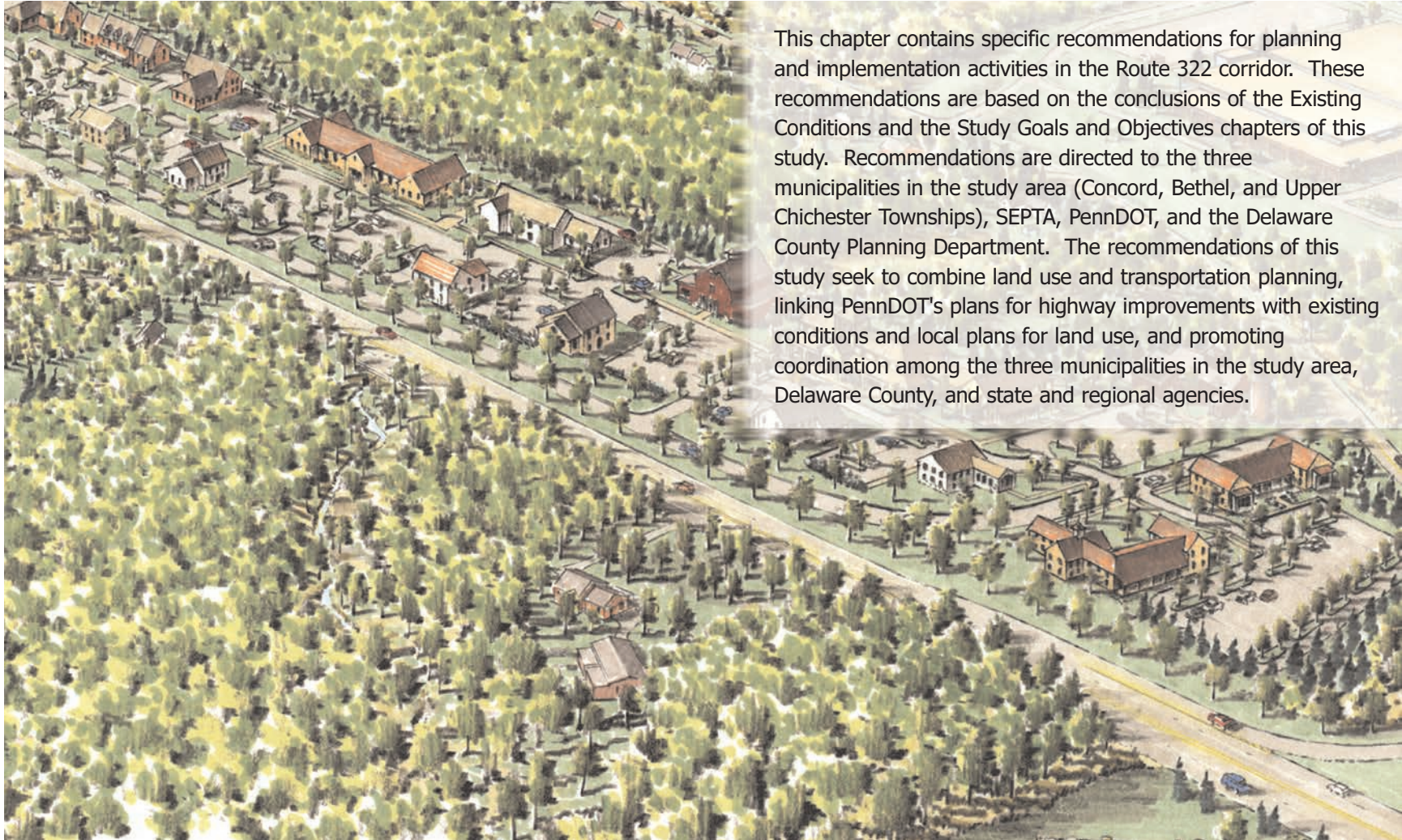
Preserve the character of existing neighborhoods by directing regional through traffic to arterial highways, rather than to local roads.

Promote the creation or extension of mass transit facilities and opportunities, or support these where they already exist, and encourage land uses that are conducive to mass transit, such as transit-oriented development.

Promote access management techniques to ensure that the circulation system functions at maximum efficiency, and ensure the safety of users of the circulation system by identifying and improving unsafe road sections or intersections.

Multi-Municipal Planning

Coordinate development goals and programs with those in adjacent townships and with regional plans for the County, and promote multi-municipal cooperative agreements and other tools derived from the Pennsylvania Municipalities Planning Code.



This chapter contains specific recommendations for planning and implementation activities in the Route 322 corridor. These recommendations are based on the conclusions of the Existing Conditions and the Study Goals and Objectives chapters of this study. Recommendations are directed to the three municipalities in the study area (Concord, Bethel, and Upper Chichester Townships), SEPTA, PennDOT, and the Delaware County Planning Department. The recommendations of this study seek to combine land use and transportation planning, linking PennDOT's plans for highway improvements with existing conditions and local plans for land use, and promoting coordination among the three municipalities in the study area, Delaware County, and state and regional agencies.

This illustration, prepared by Carter Van Dyke Associates, shows development concepts for a commercial zone in Bethel Township along Route 322.

The bulk of this study's recommendations are directed specifically to Bethel, Concord, or Upper Chichester Townships. The remainder of this chapter is divided into three sections, one for each township, which provide maps and text descriptions of specific recommendation areas. The coverage of these maps is shown on **Map 11**.

A number of common themes run through the municipal recommendations. First, many of the recommendations attempt to address the corridor's automobile-oriented land use patterns. Expanded bus service is recommended for several areas in the corridor, as well as transit-supportive facilities such as bus shelters and park-and-ride facilities. Also, sidewalks, pedestrian bridges or tunnels, crosswalks, and bicycle facilities are also recommended in several locations.



Another theme involves the concentration of intense land uses along Route 322. The immediate corridor of Route 322 is an appropriate location for high-density housing, employment centers, and commercial uses (as long as access is properly managed), because of its accessibility to automobile traffic and users of transit. Therefore, many of this study's recommendations involve the intensification of land use near the highway. While some of these recommendations may seem to contradict some of the land uses shown in DVRPC's *Horizons 2025* plan, highway improvements are often accompanied by increased intensity in the immediate highway corridor. Thus, rather than denying that this will happen, DVRPC sought to provide recommendations for how future intense land uses could co-exist with the highway improvements and with the preservation of important resources.

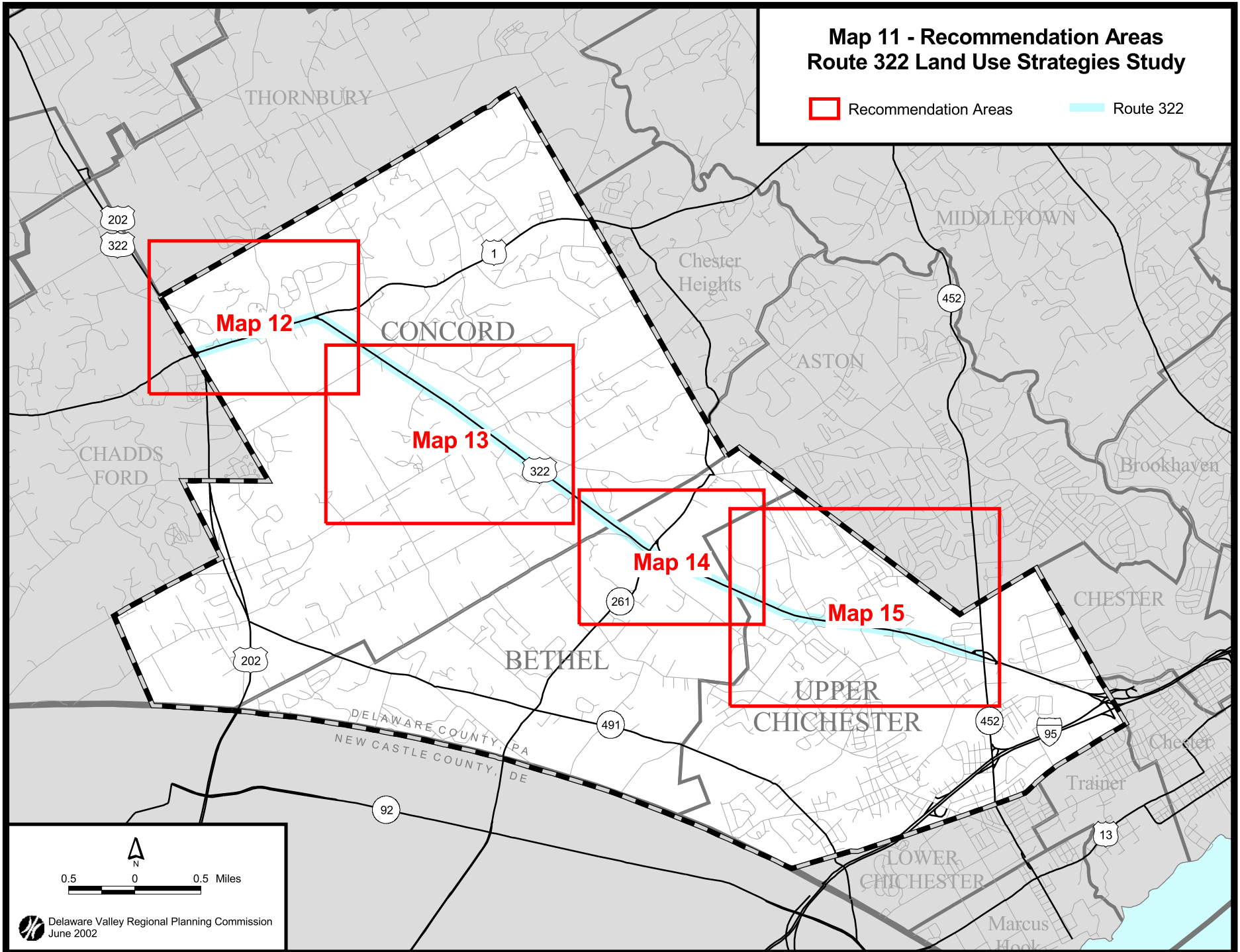
Recommendations to SEPTA

Based on this study's analysis of land use, employment, and current bus service, several recommendations are directed to SEPTA:

- Bus service to Delaware should be established, as many corridor residents travel to Delaware for employment or shopping. Re-establishing bus service on Route 202 may be the best way to provide these transit connections. This will require coordination between Chester, Delaware, and New Castle Counties, the City of Wilmington, and other transit agencies such as the Delaware Transit Corporation and the Delaware County TMA.
- Future changes to the path and service frequency of bus route 314 should be considered. This route would provide bus service to new employment centers in the corridor, using new or proposed access roads, and avoiding bus stops directly on Route 322.
- An extension of bus route 314 to the Chester Transportation Center would increase its ridership, according to a recent report on transit improvements for Delaware County prepared by Gannett Fleming, Inc.

Map 11 - Recommendation Areas Route 322 Land Use Strategies Study

 Recommendation Areas  Route 322



Recommendations to PennDOT

This study requires PennDOT's support to be effective. Many of the specific municipal recommendations contained in the following pages, such as pedestrian bridges or bicycle lanes and sidewalks on intersecting roads, will require cooperation between the municipalities and PennDOT. In addition, several recommendations are directed specifically to PennDOT:

- Coordinate with SEPTA and Delaware County Planning Department staff to provide future bus facilities on Route 322 in appropriate locations.
- Consider the comments made by the Delaware County Planning Department in response to the Environmental Assessment during the public comment period for this document.
- Coordinate design activities with the efforts of Concord and Bethel Township to encourage commercial development along Route 322.
- During the final design phase of the project, coordinate with the study area municipalities to provide pedestrian and bicycle crossings at appropriate points on Route 322. Several key crossing points are identified in this study's specific recommendations, many of them in areas where there is already grade separation.
- Also during the final design phase, address important local concerns such as: providing landscaping and aesthetic improvements along the highway; allowing emergency

vehicle access; providing a closed-loop traffic signal system on Route 322; and coordinating with utility providers to schedule utility expansions to correspond with roadway improvements.

- Continue to respond to local concerns and requests during the improvement project, and hold periodic meetings with the municipalities to report on the status of the project.

It should be noted that the widening of Route 322 is supported by the municipalities in the study area, and that most of these recommendations to PennDOT can be addressed during the final design phase of the improvement project.

Recommendations to Delaware County Planning Department

The Delaware County Planning Department (DCPD) has been actively involved in all stages of the Route 322 Land Use Strategies Study. A few follow-up recommendations are directed to DCPD:

- Investigate funding options for conducting a market study for the Route 322 corridor to determine potential demand for various types of businesses.
- Continue the work begun during the Implementation Phase of the Route 322 Land Use Study. Meet with corridor municipalities to further discuss the amendments to municipal zoning ordinances and comprehensive plans, and coordinate further meetings with PennDOT.

Concord Township

Concord Township is a rapidly growing suburban community with a strong economic base and high levels of employment. Recent and proposed development in the western part of the Township has made Painter's Crossroads into a major employment and commercial center. Growth in both population and employment is projected to continue into the near future. The economic prosperity must be balanced by the preservation of the Township's important historic resources, including historic landscapes and districts.

The Implementation Phase of the Route 322 Land Use Study began in July 2001. Over the following year, DVRPC and Delaware County Planning Department staff held several meetings with the Concord Township Zoning Task Force to discuss land use, access management, and transportation in the Route 322 corridor. Appendix A describes the results of these meetings.

Specific Recommendations

Recommendations for specific sites in Concord Township are contained on **Map 12** and **Map 13** with accompanying descriptive text. In general, these recommendations deal with bus service, sidewalks and bicycle lanes, and access roads, and consider both land use and transportation conditions. Additional recommendations deal with the emerging "edge city" at Painter's Crossroads, a new commercial district along Route 322, and a multi-municipal pedestrian and bicycle trail.

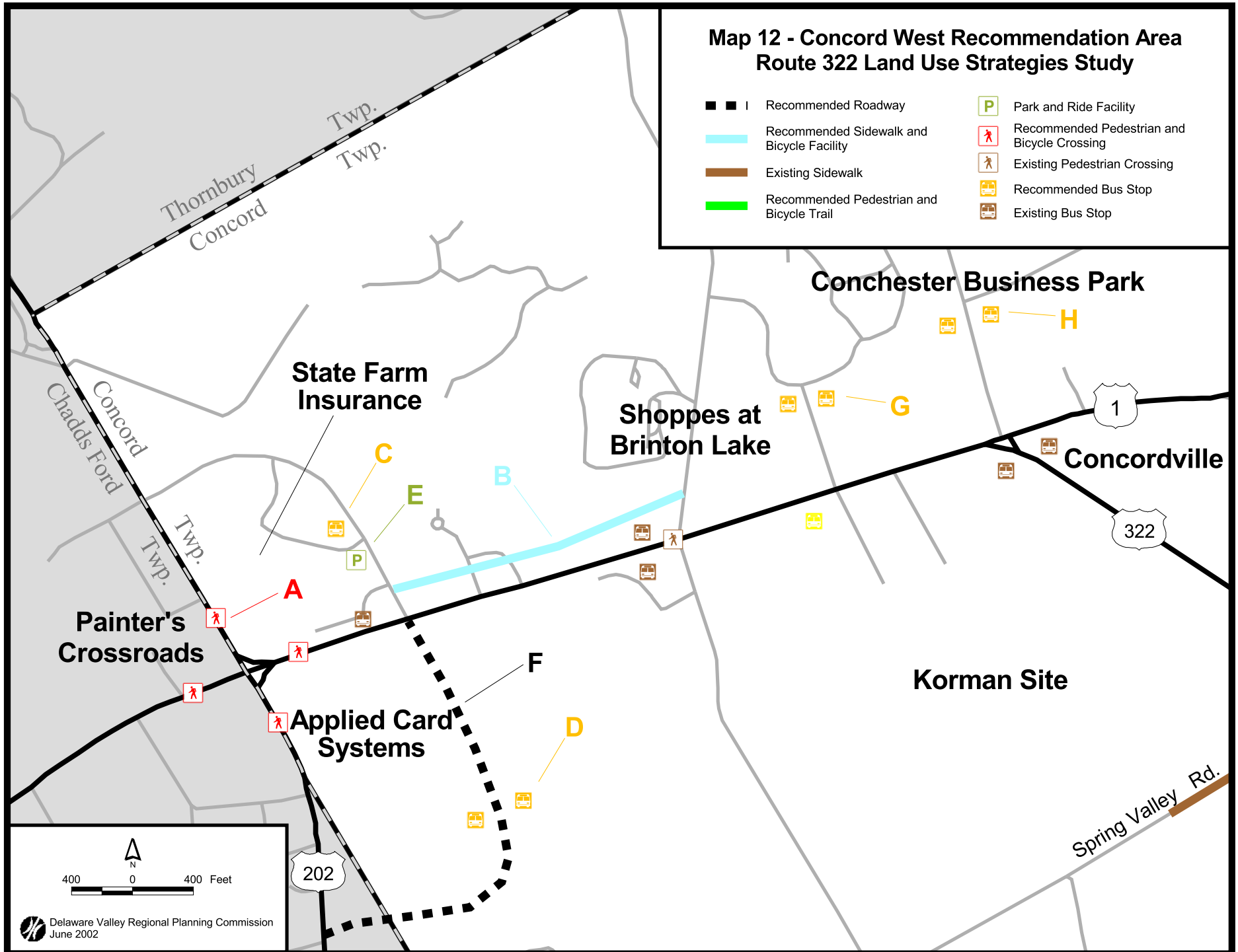
General Recommendations

In addition to the specific recommendations on the following pages, Concord Township should consider a number of other activities, including:

- Consider a Transfer of Development Rights program, as described in the Township's Comprehensive Plan.
- Ensure that Concord Township meets its "fair share" of multi-family housing, and that affordable housing is available.
- Explore the possibilities for heritage tourism in Concord Township, particularly in Concordville, with its concentration of historically significant properties.
- Coordinate land use planning with the expansion of sewer and water facilities, directing development to land that can be provided with these services. Also, coordinate with Garnet Valley School District on the expansion of school facilities.
- Provide adequate parkland and recreation facilities for the Township's growing population.
- Enhance bus service in the Route 322 corridor by installing bus shelters at existing bus stops.
- Continue the multi-municipal coordination that was begun during the Route 322 Land Use Study.

Map 12 - Concord West Recommendation Area Route 322 Land Use Strategies Study

- | | |
|---|---|
|  Recommended Roadway |  Park and Ride Facility |
|  Recommended Sidewalk and Bicycle Facility |  Recommended Pedestrian and Bicycle Crossing |
|  Existing Sidewalk |  Existing Pedestrian Crossing |
|  Recommended Pedestrian and Bicycle Trail |  Recommended Bus Stop |
| |  Existing Bus Stop |



Painter's Crossroads

The Painter's Crossroads area, at the intersection of Route 1 and Route 202, is a major employment and commercial center. It is also designated by DVRPC's *Horizons 2025* land use and transportation plan as a growth center, indicating that this area will continue to experience employment gains. However, the Painter's Crossroads area has few pedestrian or transit facilities, which limit its accessibility and its ability to attract new employees.



Figure 18. Existing conditions in the Painter's Crossroads area, looking north. This photograph was taken shortly before the construction of the Applied Card Systems office building, which would appear in the foreground.

Several improvements in the Painter's Crossroads area would help to alleviate these problems. First, **pedestrian bridges (A)** crossing Route 1 and Route 202, would link the four quadrants of this highway interchange. Currently, the many employees of the businesses in this area, such as State Farm Insurance, are unable to cross the highways (unless they drive on the often-congested highways) to patronize nearby restaurants, shopping, and services. In addition, **sidewalks (B)** between State Farm Insurance and the Shoppes at Brinton Lake would serve a similar function.

Transit accessibility could be increased by the construction of **bus shelters (C)** along State Farm Drive or in the interior of the State Farm Insurance parking lot. Also, once the Applied Card Systems facility opens for business, **bus shelters (D)** could help this business to attract employees (especially if bus service on Route 202 is re-established), while reducing the amount of additional vehicle traffic that will be generated. A **park-and-ride facility (E)** in the parking lot of one of these businesses would also encourage bus use. All of these transit recommendations require coordination between the affected businesses, SEPTA, and Concord Township, and would benefit from an improvement in bus route 314 and the resumption of a bus route on Route 202.



Figure 19. This illustration of a ring road in the Painter's Crossroads area shows the probable alignment of this ring road, as well as the proposed grade-separated interchange at Route 202 and Route 1. This illustration was prepared by Carter Van Dyke Associates for the *Route 202 Section 100 Land Use Strategies Study*.

Finally, completion of the long-planned **ring road (F)** around the Route 1 and Route 202 intersection could reduce congestion at this intersection, provide access to the businesses located in Painter's Crossroads, and allow buses to serve all quadrants of the intersection. Figure 19 shows the completed ring road, as well as the proposed grade-separated interchange for Route 202 and Route 1 (as recommended by PennDOT as part of the Route 202 Section 100 improvement project). This illustration was prepared by Carter Van Dyke Associates for DVRPC's *Route 202 Section 100 Land Use Strategies Study*.

The northeast segment of this ring road, State Farm Drive, already exists. Portions of the northwest and southwest segments, contained in Chadds Ford Township, are also in place. The southeast segment of the ring road has been partially constructed by Applied Card Systems, although it is now only for private use, and the connection to Route 202 does not align with the southwest segment of the ring road. Improvements to this arrangement may be made in the future by PennDOT, in conjunction with the pending Route 202 Section 100 improvement project.

The completion of the remaining ring road segments will require the cooperation of PennDOT, Delaware County, and Concord Township. In addition, Chadds Ford Township must be involved to complete their segments of the ring road.

Further recommendations concerning the Painter's Crossroads area can be found in DVRPC's *Route 202 Section 100 Land Use Strategies Study*, published in November 2001.

Shoppes at Brinton Lake

The Shoppes at Brinton Lake shopping center was constructed after the 2000 aerial photographs were taken, and is therefore not shown on the map. This shopping center features upscale stores, and is accessed by Brinton Lake Road and by a new road, shown on the map. The site is internally well-connected by sidewalks, and also has pedestrian connections to offices located behind it.

A system of **sidewalks (B)** between the Shoppes at Brinton Lake and State Farm Insurance could better connect these uses. Also, if the Korman site, located directly across Route 1, is developed as an office park, similar connections to this employment center should be considered. Additionally, **bus stops (G)** could help the businesses in the Shoppes at Brinton Lake to attract employees.

Conchester Business Park

The Conchester Business Park contains a number of large employers, but is not currently served by transit. These businesses could be better able to attract employees with **bus stops (H)** located along Conchester Road.

Korman Site (and nearby properties)

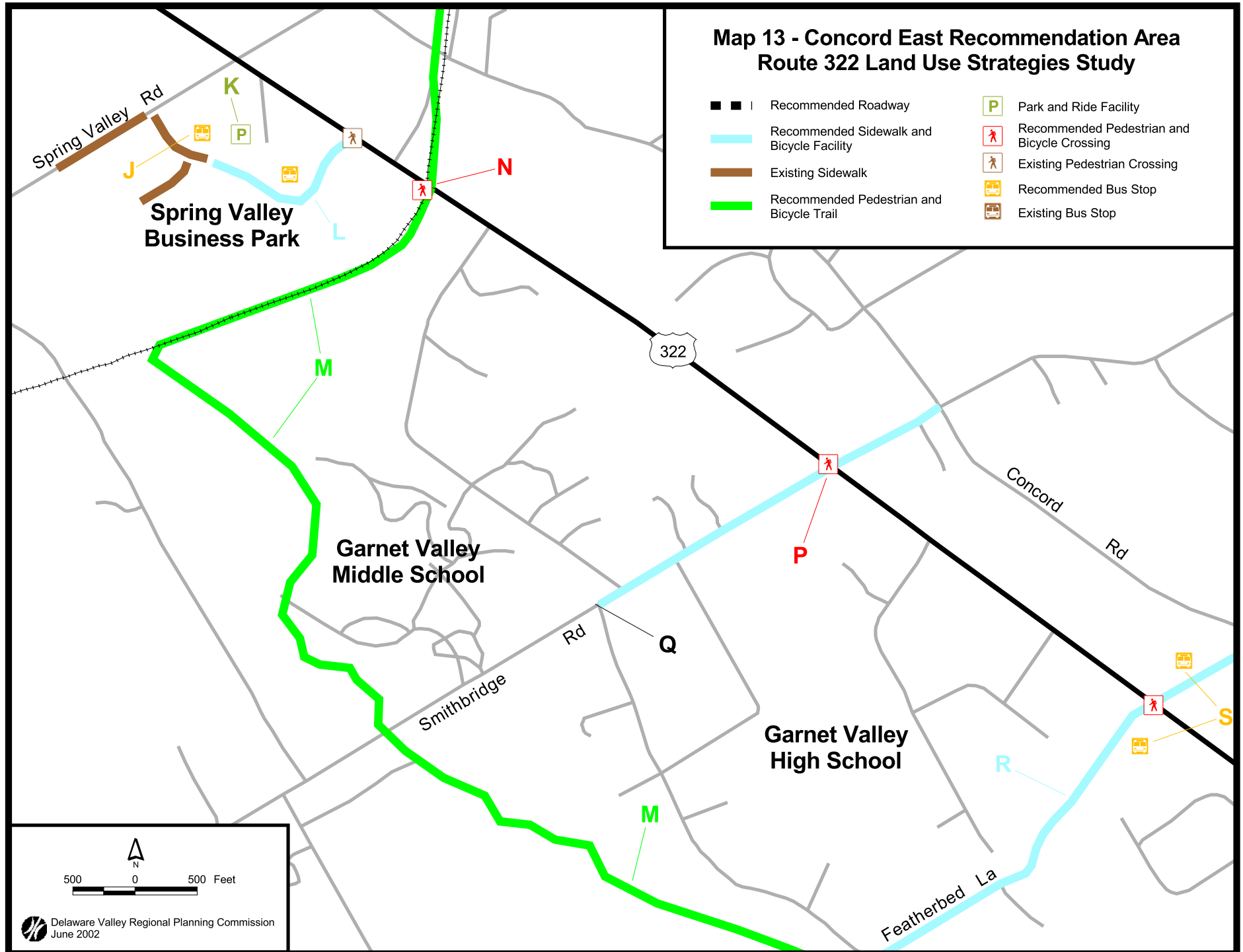
The Korman property is located south and west of the intersection of Route 1 and Route 322. It contains about 250 acres, and has the potential to be an extremely large office development, with over 8 million square feet of floor space permitted under current zoning requirements. While it will

probably not be developed at anywhere near this level of intensity, the site does have the potential to employ several thousand people. In reviewing development proposals for the Korman property, Concord Township should consider transit service, pedestrian facilities, and the effect of a development of this scale on nearby land uses and transportation systems.

In addition, Concord Township's plans for rezoning land along Route 322 in this area for highway commercial use should take the development potential of the Korman property into account. New commercial uses, such as restaurants or service providers, may be able to capitalize on the employment potential of the Korman site. Pedestrian connections between these new commercial uses and the Korman property (and also the Spring Valley Business Park) could make this area an excellent location for small commercial businesses and service providers. The specific location of these pedestrian facilities will depend on the site design of the Korman property.

Map 13 - Concord East Recommendation Area Route 322 Land Use Strategies Study

- | | |
|---|---|
|  Recommended Roadway |  Park and Ride Facility |
|  Recommended Sidewalk and Bicycle Facility |  Recommended Pedestrian and Bicycle Crossing |
|  Existing Sidewalk |  Existing Pedestrian Crossing |
|  Recommended Pedestrian and Bicycle Trail |  Recommended Bus Stop |
| |  Existing Bus Stop |



Spring Valley Business Park

The Spring Valley Business Park, shown on the 2000 aerials as only two buildings, is now considerably larger. An office of Deloitte & Touche is expected to locate in the business park, along with other large employers. The business park is served by sidewalks within the site, and even features a crosswalk at the intersection of Route 322 and Fellowship Drive. However, this crosswalk is not accompanied by sidewalks connecting it to anything. Also, there is no transit service to the Spring Valley Business Park.

To make it easier to attract employees, **bus stops (J)** should be located near to major employers within the business park. In addition, a **park-and-ride facility (K)** is located in the church parking lot, with 29 spaces reserved, but is not being used much. The Township, the landowner, and SEPTA should coordinate to ensure that this park-and-ride opportunity is used.

Also, **sidewalks (L)** between bus stops, employers, and the crosswalk on Route 322 could connect existing pedestrian and transit facilities and complementary land uses. If Concord Township rezones nearby land to commercial use, as currently planned, pedestrian connections to these new commercial uses are also recommended.

Trail System

Concord Township should continue with its plans to create a **bicycle and pedestrian trail (M)**. This trail can connect Newlin Park with other facilities, like a walking trail near

Garnet Valley Middle School and the recreational facilities of Clayton Park. Converting the out-of-service Octoraro rail line to a trail, and following utility right-of-ways, can provide the missing links between these recreational uses. Also, this trail can connect to recreational facilities planned in Bethel Township and Upper Chichester Township (see other recommendation sections for more details.) This trail could cross Route 322 by means of a **pedestrian tunnel (N)** along the Octoraro rail line right-of-way.

Smithbridge Road

Smithbridge Road passes under Route 322, rather than meeting it at-grade, and therefore provides a crossing point for pedestrians and bicyclists. PennDOT is planning to improve the bridge over Smithbridge Road during the Route 322 widening project.

Adequate room should be provided under the bridge for **sidewalks and bicycle lanes (P)**. Also, extending these facilities west to Station Road and Garnet Valley High School and Middle School, and east to Concord Road, could link additional areas. Pedestrian and bicycle facilities are especially important in this area because of the concentration of middle school and high school students.

With the development of the Bodo property, Concord Township plans to **realign Station Road (Q)** to meet Bethel Road, and to realign the entrance to Garnet Valley Middle School onto Station Road. This will create a more logical, safer intersection, which can be served with pedestrian and bicycle facilities.

Featherbed Lane / Mattson Road

As part of the Route 322 improvement project, PennDOT is planning to install a traffic light at the intersection of Route 322 and Featherbed Lane / Mattson Road (pictured to the right). Left turns would not be permitted, and jughandles would be constructed on two of the corners of the intersection. Meanwhile, Concord Township had planned commercial development on this corner, because of its location at an intersection along a major highway.

A possible solution involves expanding the jughandles to larger loop roads and allowing commercial development within them. Figure 21 illustrates this concept. As this demonstrates, several commercial uses could fit within each loop road, if parking were shared and the uses were clustered. Access to the shared parking lots would be from the rear of the loop road, after traffic has had time to slow after exiting the highway.

During the Implementation Phase of the Route 322 Land Use Study, DVRPC and Delaware County Planning Department staff met several times with Concord Township representatives to develop a zoning district for this site. This district permits small-scale commercial development, sets maximum lot sizes for commercial uses, and prohibits automobile-oriented uses such as gas stations and car dealerships. It also permits shared parking and parking reserve areas, requires sidewalks and bicycle parking, and provides architectural guidelines. The full text of this ordinance, as well as comprehensive plan amendments to accompany it, are in Appendix A.

An important feature of this site is the prevalence of **sidewalks and bicycle lanes (R)**, which also extend east along Mattson Road to Concord Road and west along Featherbed Lane to connect with the proposed **bicycle and pedestrian trail (M)**. Sidewalks are required within the site, connecting businesses, parking areas, and transit facilities.

To provide transit access to these businesses, **bus shelters (S)** along the loop roads are necessary. Bus service can provide access to the shopping and service opportunities in each commercial cluster, and can make it easier for these businesses to attract employees.



Figure 20. Existing conditions at the intersection of Route 322 and Mattson Road / Featherbed Lane, shown in Figure 21.

Figure 21 – Concord Illustration (completion expected mid-June)

Bethel Township

Bethel Township is a rapidly growing suburban community which is primarily residential. During the 1990s, the Township nearly doubled in population, and had one of the highest rates of population growth in the entire DVRPC region. While the Township currently has little employment or commercial base, the recent rezoning of land along Route 322 for general business use may soon change this. A future challenge for the Township will be balancing the preservation of its rural character with future employment and population growth.

The Implementation Phase of the Route 322 Land Use Study began in July 2001. Over the following year, DVRPC and Delaware County Planning Department staff held several meetings with the Bethel Township Planning Commission to discuss land use, access management, and transportation in the Route 322 corridor. Appendix A describes the results of these meetings.

Specific Recommendations

Recommendations for specific sites in Bethel Township are contained on **Map 14** and in the accompanying text. In general, these recommendations deal with bus service, sidewalks and bicycle lanes, and access roads, and consider both land use and transportation conditions. Additional recommendations deal with the rezoning of land along Route 322 for general business use, as well as a multi-municipal pedestrian and bicycle trail.

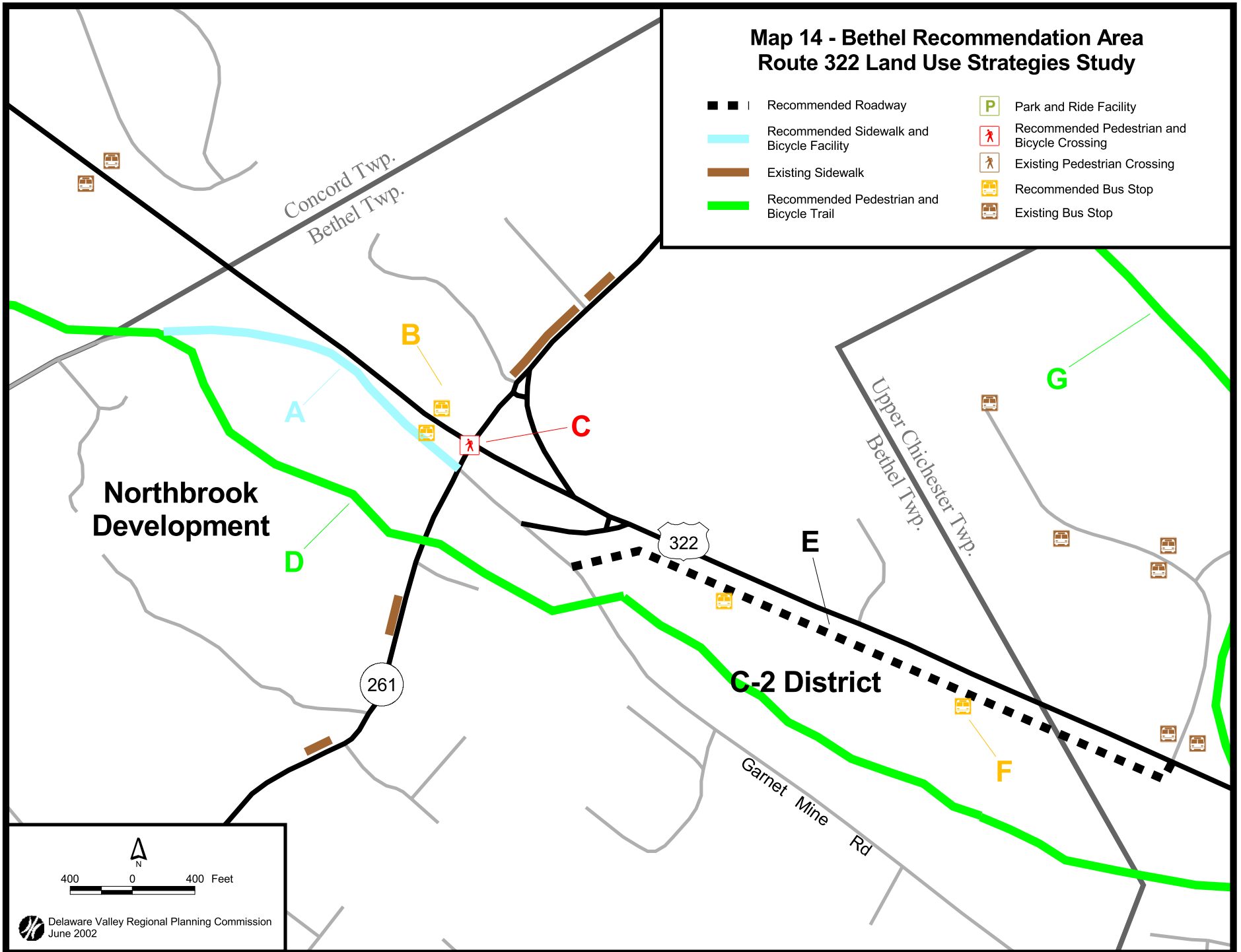
General Recommendations

In addition to the specific recommendations, Bethel Township should consider a number of other activities, including:

- Ensure that Bethel Township meets its “fair share” of multi-family housing, and that affordable housing is available.
- Ensure the preservation of Bethel’s unique history by adopting additional protective measures for the historical resources, including adopting the Bethel Township Historic Resources Survey into the new comprehensive plan, establishing a historical commission, and incorporating preservation incentives into relevant ordinances.
- Coordinate land use planning with expansion of sewer and water facilities, directing development to land that can be provided with these services. Also, coordinate with Garnet Valley School District on the expansion of school facilities.
- Provide adequate parkland and recreation facilities for the Township’s growing population.
- Provide bus stops or bus shelters to take advantage of the Township’s location along SEPTA’s bus route 314.
- Incorporate the existing conditions analysis, conclusions and recommendations of this study into the ongoing update of the Bethel Township Comprehensive Plan.
- Continue the multi-municipal coordination that was begun during the Route 322 Land Use Study.

Map 14 - Bethel Recommendation Area Route 322 Land Use Strategies Study

- | | | | |
|-----|---|---|---|
| ■ ■ | Recommended Roadway | P | Park and Ride Facility |
| — | Recommended Sidewalk and Bicycle Facility | ⤴ | Recommended Pedestrian and Bicycle Crossing |
| — | Existing Sidewalk | ⤴ | Existing Pedestrian Crossing |
| — | Recommended Pedestrian and Bicycle Trail | 🚌 | Recommended Bus Stop |
| | | 🚌 | Existing Bus Stop |



Northbrook Development

A large residential development called Northbrook is currently under construction in Bethel Township. Construction began after the 2000 aerials were taken, so the site is not shown on the map. The Northbrook development will contain about 200 semi-detached residential units when complete.

A **bus shelter (B)** near the intersection of Garnet Mine Road and Route 261 would provide the residents of Northbrook with access to transit. This bus stop could be served by **sidewalks (A)** on Garnet Mine Road and on Route 261 between the entrance to the development and the bus stop.

Also, the Northbrook development lies along the proposed **bicycle and pedestrian trail (D)** which could connect Upper Chichester, Bethel, and Concord Townships, among others. The trail should continue within the Northbrook site, connecting to Clayton Park on the northwest (see Concord Township recommendations for more details) and to other links of the trail to the southeast.

Route 261 Bridge

Because Route 261 crosses over Route 322 on a bridge, rather than at-grade, it provides a good means for pedestrians and bicyclists to cross the highway. In addition, according to Delaware County's Bicycle Plan, bicycle lanes are planned along Route 261 for the roadway's entire length. Therefore, **sidewalks and bicycle lanes (C)** should be provided on the Route 261 bridge, linking the two sides of Route 322.

Trail System

Bethel Township should coordinate with adjacent townships to create a continuous greenway through the area by linking trail systems. One **pedestrian and bicycle trail (D)** will connect planned trail systems in Concord and Upper Chichester Townships. In Bethel, this trail would emerge from Clayton Park, pass through the Northbrook development then along the rear of businesses in the new C-2 zone, and link with a proposed trail in Upper Chichester Township. A second **pedestrian and bicycle trail (G)** would run through the northern part of Bethel Township, connecting with another proposed trail in Upper Chichester Township, and possibly continuing through to Concord or Aston.

New C-2 District

During the summer of 2001, Bethel Township rezoned a strip of land along the south side of Route 322 to C-2 (General Business) use from its former residential designation. For this site to be commercially viable, it must be accessible to traffic traveling on Route 322.

One possible solution, that can maintain PennDOT's plans for a separated highway while providing access to the commercial properties, involves a **marginal access road (E)**. An illustration of the concept is shown in Figure 23. The western end of the marginal access road would connect with Garnet Mine Road, which then leads into the grade-separated interchange of Route 261 and Route 322. The eastern end of this road could connect with Creek Parkway at its intersection with Route 322, where left turns are permitted. Therefore, eastbound or westbound traffic would have access to the businesses in the C-2 zone by turning at Creek Parkway or Route 261.

During the Implementation Phase of the Route 322 Land Use Study, DVRPC and Delaware County staff met several times with the Bethel Township Planning Commission to discuss the site, and recommended a few changes to the C-2 district. The new district permits shared parking, and requires sidewalks and bicycle parking. The full text of these changes is found in Appendix A.

Several important features of the marginal access road are also shown in the illustration. **Bus shelters (F)** would provide transit access to the businesses, helping them to attract employees. Parking lots are shared between uses,

resulting in less land being necessary for parking. Also, sidewalks are shown, connecting the businesses to parking areas and bus shelters, and providing pedestrian access from the marginal access road to Garnet Mine Road and Creek Parkway. Finally, the proposed multi-municipal **pedestrian and bicycle trail (D)** runs behind the commercial uses, connecting to other recreation facilities in adjacent townships.



Figure 22. Existing conditions along Route 322 in Bethel Township, shown in Figure 23.

Figure 23 – Bethel Illustration (completion expected mid-June)

Upper Chichester Township

Upper Chichester Township is more developed than the other townships in the Route 322 corridor, and has a different history of development. The Township currently has a large number of commercial uses, and many of them are clustered directly along Route 322. Access management will be a major issue for the township to deal with, and innovative access solutions may be necessary.

The Implementation Phase of the Route 322 Land Use Study began in July 2001. Over the following year, DVRPC and Delaware County Planning Department staff held several meetings with the Upper Chichester Township Route 322 Steering Committee to discuss land use, access management, and transportation in the Route 322 corridor. Appendix A describes the results of these meetings.

Specific Recommendations




Recommendations for specific sites in Upper Chichester Township are contained on **Map 15** and the accompanying text. In general, these recommendations deal with bus service, sidewalks and bicycle lanes, and access roads, and consider both land use and transportation conditions. Additional recommendations deal with a multi-municipal pedestrian and bicycle trail, which may eventually connect to the proposed East Coast Greenway, a linear network of open space that will eventually run from Maine to Florida.

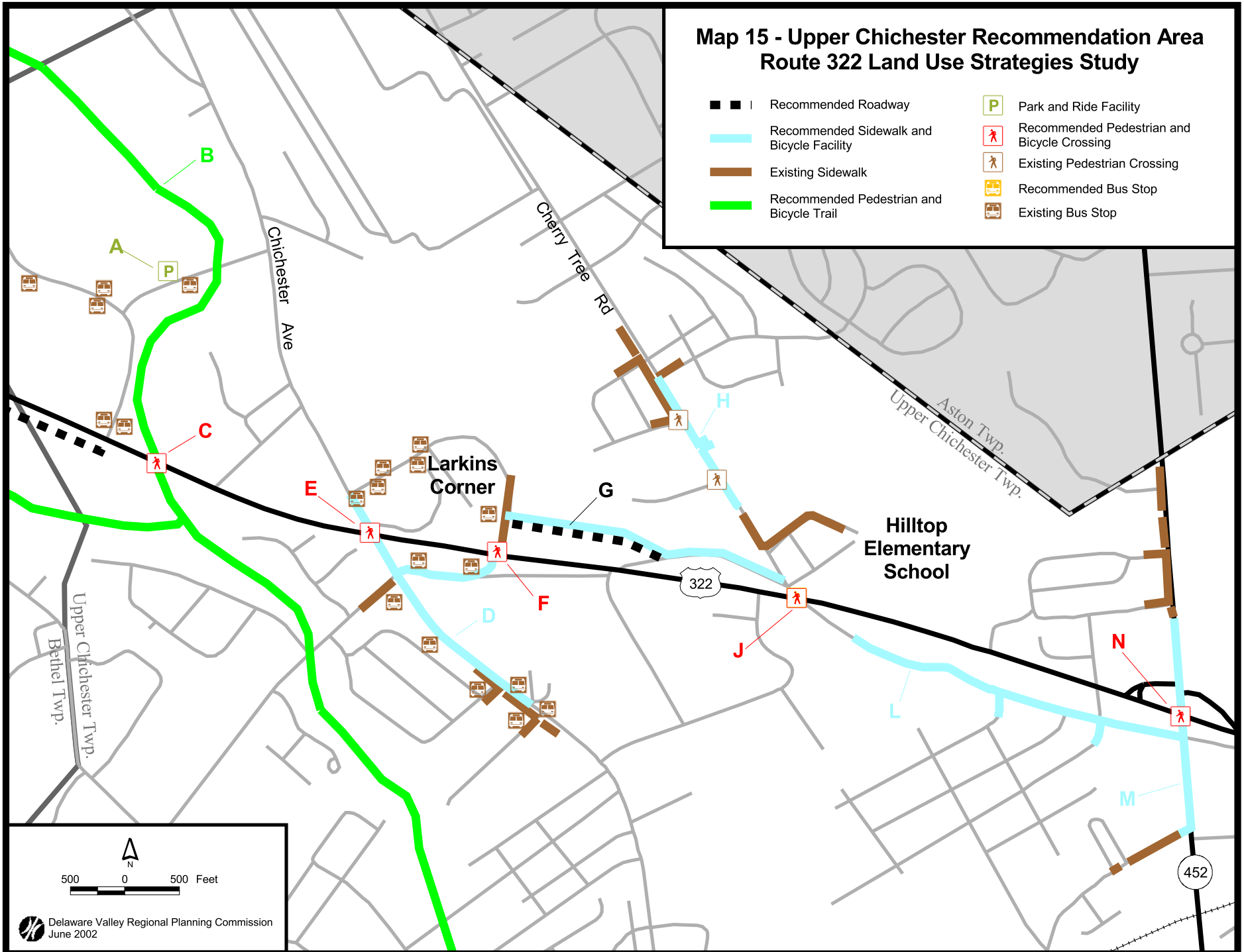
General Recommendations

In addition to the specific recommendations on the following pages, Upper Chichester Township should consider a number of other activities, including:

- Update the Comprehensive Plan, which was last revised in 1990, and which is no longer consistent with local land use conditions or goals.
- Within the Township's developed commercial areas (including those outside the Route 322 corridor), consider Main Street programs or similar activities to improve walkability and community connections.
- Incorporate the Upper Chichester Historic Resources Survey (which lists 83 historic properties) into the comprehensive plan. Also, consider forming a historic commission to update the survey and develop a preservation plan with suggested preservation tools.
- Provide adequate parkland and recreation facilities for the Township's growing population, and pursue creating a connection to the East Coast Greenway.
- Enhance transit service within Upper Chichester Township by collaborating with SEPTA and PennDOT to provide bus shelters at additional bus stop locations.
- Continue the multi-municipal coordination that was begun during the Route 322 Land Use Study.

Map 15 - Upper Chichester Recommendation Area Route 322 Land Use Strategies Study

- | | |
|---|---|
| ■ ■ Recommended Roadway | P Park and Ride Facility |
| Recommended Sidewalk and Bicycle Facility |  Recommended Pedestrian and Bicycle Crossing |
| Existing Sidewalk |  Existing Pedestrian Crossing |
| Recommended Pedestrian and Bicycle Trail |  Recommended Bus Stop |
| |  Existing Bus Stop |



500 0 500 Feet

Upper Chichester Township Building

Upper Chichester Township has begun construction of a new municipal building, to be located near the current one on Furey Lane. This area is already covered by bus service, SEPTA's route 314. Bus ridership in the corridor could be increased by a **park-and-ride facility (A)** in the parking lot of the new municipal building. This will require coordination between Upper Chichester Township and SEPTA. In addition, a **pedestrian and bicycle trail (B)** is proposed to pass behind the municipal building, providing pedestrian and bicycle connections to other nearby townships.

Trail System

Upper Chichester Township should continue with its plans to create a **bicycle and pedestrian trail (B)**. This trail can begin in the north of the Township, running along the utility right-of-way, passing behind the new municipal building, and following the East Branch of Naamans Creek south through the Township. The trail may eventually form a spur of the East Coast Greenway, which will provide a pedestrian and bicycle path the entire length of the east coast. This trail should cross Route 322 by means of a **pedestrian bridge or tunnel (C)** where the East Branch of Naamans Creek crosses Route 322. Another part of the trail will connect to proposed pedestrian and bicycle facilities in Bethel and Concord Townships (see the other recommendation sections for more details.)

Chichester Avenue

In the immediate corridor of Route 322, Chichester Avenue connects residential neighborhoods, shopping and employment opportunities at Larkins Corner, community facilities such as churches and playing fields, and bus shelters. Additional **sidewalks (D)** along Chichester Avenue could help to provide pedestrian links between these facilities. Also, Chichester Avenue provides a good crossing point for pedestrians and bicyclists, as it passes under Route 322, rather than meeting it at-grade. Therefore, adequate room for **sidewalks and bicycle lanes (E)** along Chichester Avenue should be provided.

Larkins Corner (and nearby properties)

The Larkins Corner Shopping Center contains several large, big-box stores, fast-food restaurants, and similar uses. Chelsea Parkway, which circles the shopping center, has several bus shelters, making the shopping center fairly transit-accessible. However, pedestrian facilities are lacking on nearby roads. Several improvements could be made in this area to increase pedestrian access, transit use, and traffic flow.

Although pedestrians are forbidden to use the intersection of Route 322 and Chelsea Parkway, because of its unsafe conditions, many people cross here anyway. At this intersection, **pedestrian bridges or crosswalks (F)** would allow pedestrians a safe way to cross Route 322. Sidewalks already exist along Chelsea Parkway to the north of its intersection with Route 322. Additional **sidewalks (D)** along

Bethel Road south of the highway would result in safer pedestrian conditions.

An additional recommendation in the area of Larkins Corner is the construction of an **access road (G)** connecting Bethel Road north with Chelsea Parkway. This would eliminate the unsafe intersection of Bethel Road north and Route 322, which is at an unusual angle. This road would provide reverse frontage access to the Conchester Lanes bowling alley, which currently has direct access onto Route 322. Also, sidewalks along this access road and along Bethel Road would provide safer pedestrian connections between the shopping center, bowling alley, nearby neighborhoods, and Hilltop Elementary School.

Cherry Tree Road

Cherry Tree Road has some pedestrian facilities already, including crosswalks in two places and sidewalks near some residential subdivisions and Hilltop Elementary School. Additional **sidewalks (H)** along this road would connect these existing facilities, providing a safer atmosphere for pedestrians and bicyclists. Also, a **pedestrian crossing (J)** near Cherry Tree Road would allow pedestrians to cross the highway without entering the busy intersection of Cherry Tree Road and Route 322. Pedestrian and bicycle facilities are especially important in this area because of the concentration of children.

Bethel Road

Between Cherry Tree Road and Route 452, Bethel Road parallels Route 322 to the south. The narrow area between

Bethel Road and the highway is zoned for a mix of commercial uses, but is currently used by residences, with access to Bethel Road. If this land is ever converted to commercial use, as permitted by current zoning, the new businesses would continue to have access from Bethel Road.

To provide pedestrian access to new businesses in this area, **sidewalks (L)** should be provided along Bethel Road. However, due to poor conditions along this road, these sidewalks should be separated from the main road by berming or other safety features. Other landscaping may be necessary along Bethel Road, to buffer the residences on its south side from the additional traffic generated by commercial uses.

During the Implementation Phase of the Route 322 Land Use Study, DVRPC and Delaware County Planning Department staff met several times with Upper Chichester Township to provide recommendations for changes to the existing zoning in this area. The new zoning district permits shared parking, requires sidewalks and bicycle parking, and provides architectural guidelines. The full text of this district, including comprehensive plan amendments to support it, is found in Appendix A.

Route 452

Route 452 passes under Route 322, making it an ideal location for a pedestrian crossing point. Therefore, **sidewalks and bicycle lanes (N)** should be provided on Route 452 where it passes under Route 322. Also, to connect these improvements to existing and planned pedestrian facilities, and provide access to major employers, **sidewalks (M)** should be provided for much of the length of Route 452.

Implementation

This study has provided recommendations for linking land use and transportation planning in the Route 322 corridor. By addressing the corridor as a whole, this study has created a framework that allows local projects to fit in as part of a larger land use and transportation strategy. However, without implementation at the local level, the recommendations provided in this chapter will have no effect, and the goals and objectives of the study will not be met.

To ensure implementation of the recommendations, the Route 322 Land Use Strategies Study included a significant Implementation Phase, which lasted from July 2001 to the study's completion in June 2002. During this year, DVRPC and the Delaware County Planning Department held several (four or five) meetings with each of the corridor municipalities individually, and two joint meetings attended by representatives from all three municipalities, to discuss the recommendations of the study. Some of these meetings were also attended by representatives from PennDOT and their highway design consultant, Alfred Benesch & Company.

As a result of these implementation activities, several new zoning districts have been proposed for locations along Route 322, and amendments to existing zoning districts and comprehensive plans have also been proposed. These planning documents were drafted in response to municipal requests, or to further the goals of this study. They have been presented to the respective corridor municipalities, discussed, and modified. In some cases, this process of discussion and modification went through several iterations

before the document was finalized. Also, these documents are tailored specifically to each municipality in the corridor, and are designed to fit within the existing municipal zoning ordinances and comprehensive plans with minimal modification.¹ The full text of these documents is contained in Appendix A.

Next Steps

Bethel, Concord, and Upper Chichester townships should consider the contents of Appendix A to be their property, to modify or adopt as they see fit. DVRPC strongly encourages these townships to consider adopting these ordinances and comprehensive plan amendments, and to continue to work with the Delaware County Planning Department and PennDOT to define the future of the Route 322 corridor. For this study to be effective, the members of each municipality's steering committee (listed in Appendix B) must push for the implementation of its recommendations.

¹ Please note that the formats of these documents have been modified to be consistent with the layout of this report. The versions of these documents that were presented to the corridor municipalities were similar in format to the existing zoning ordinances and comprehensive plans.

APPENDIX A IMPLEMENTATION DOCUMENTS

Appendix A includes the implementation documents that were produced by DVRPC and the Delaware County Planning Department to implement the goals of the Route 322 Land Use Strategies Study. In general, these documents seek to link land use and transportation planning by adding additional language in the municipal Comprehensive Plans, by providing Access Management Overlay Districts (which provide further controls over land use and access along major highways) for each Township, and by drafting additional zoning districts or modifying existing districts where appropriate.

This Appendix includes the following documents:

Concord Township	A-3
Comprehensive Plan Amendments	A-4
Article XV: N-C Neighborhood Commercial District	A-5
Article XXXIII: Access Management Overlay District	A-10
Bethel Township	A-15
Comprehensive Plan Amendments	A-16
Modifications to Article XXII: C-2 General Business District	A-17
Article XXI: Access Management Overlay District	A-19
Upper Chichester Township	A-25
Comprehensive Plan Amendments	A-26
Article 1201: Agricultural Preservation District	A-28
Modifications to Article 800: C-2 Neighborhood Commercial District	A-31
Article 1401: Access Management Overlay District	A-34

Concord Township

The implementation documents for Concord Township were developed during the Implementation phase of the Route 322 Land Use Strategies Study, conducted between July 2001 and June 2002. DVRPC and Delaware County Planning Department staff attended several regular meetings of the Concord Township Zoning Task Force during this period, determined the needs of the Township, and drafted amendments to the municipal Comprehensive Plan and Zoning Ordinance to meet these needs. The documents contained in this section of Appendix A have been modified based on these meetings. DVRPC encourages Concord Township to continue to modify these documents, and to adopt them as amendments to the Comprehensive Plan or Zoning Ordinance.

The documents contained in this section include the following:

Comprehensive Plan Amendments

- Include description of function of Route 322 in Concord Township, and support N-C Neighborhood Commercial District

Article XV: N-C Neighborhood Commercial District

- Applies to area at intersection of Route 322 and Featherbed / Mattson Road
- Allows small-scale, locally-oriented businesses to locate inside loop roads proposed by PennDOT at intersection
- Prohibits automobile-oriented uses, like gas stations and car dealerships
- Discourages big-box stores by regulating maximum floor space
- Allows shared parking, requires connections between parking lots, and requires bicycle parking and sidewalks
- Provides architectural design standards to guide appearance of buildings

Article XXXIII: Access Management Overlay District

- Provides additional regulations on land use and access among parcels adjacent to Route 322
- Similar to Access Management Overlay Districts recommended for Bethel and Upper Chichester Townships

Comprehensive Plan Amendments

Add to "A Plan for Land Use" (p. 6-8):

Neighborhood Commercial District at the Intersection of Route 322 and Mattson Road / Featherbed Lane

If PennDOT constructs loop roads at the intersection of Route 322 and Mattson Road / Featherbed Lane, then the neighborhood commercial district would encourage small-scale, neighborhood-based commercial development adjacent to residential areas. This district seeks to integrate small-scale neighborhood commercial clusters into the surrounding residential neighborhoods by encouraging a more walkable and bikeable site design. Its intent is to encourage local ownership of small businesses, and to encourage the local use of businesses, while avoiding strip commercial and large retail "big box" development.

Similar to the village center in Concordville, this district will also use design standards to promote an attractive and enjoyable shopping environment for the consumer. Additionally, the district requires pedestrian and bicycle amenities and allows for shared parking where appropriate.

Add to item 20 from "A Plan for Circulation" (p. 8-10):

Although the Township prefers a signalized intersection with protected left turn lanes, PennDOT plans to construct jughandles here. The Township has requested that PennDOT construct two loop roads in place of the jughandles. This will allow for unrestricted traffic flow on Route 322 while maximizing the use of the land within the loops for commercial purposes.

Add to Other Future Circulation System Improvements, from "A Plan for Circulation" (p. 8-13):

An access management overlay district could be adopted to provide additional regulation of the use, development, and highway access of lands located along the frontage of primary arterials (that is, Routes 1, 202, and 322). More details on this district are found in the Route 322 Land Use Strategies Study, published by the Delaware Valley Regional Planning Commission with the assistance of the Delaware County Planning Department in June 2002.

ARTICLE XV

N-C Neighborhood Commercial District

Section 210-134. Purpose.

The N-C Neighborhood Commercial District is designed to encourage small-scale, neighborhood-based commercial development within or adjacent to predominantly residential areas, in accordance with the goals of Concord Township's comprehensive plan. This District is distinct from the Township's other commercial zoning districts in that it seeks to accomplish the following specific purposes:

- A. To promote clustered, smaller-scale commercial areas in appropriate neighborhoods of Concord Township.
- B. To integrate these neighborhood commercial clusters into the surrounding residential neighborhoods by encouraging the layout and site design of these clusters to mesh with the Township's historic community character.
- C. To encourage local ownership of small businesses, and to encourage the local use of businesses, while avoiding strip commercial and large retail "big box" development in the N-C District.
- D. To make each neighborhood commercial cluster more walkable and bikeable by providing pedestrian and bicycle connections between businesses and requiring pedestrian-friendly site design and traffic management techniques.
- E. To manage vehicle access to major roadways, minimize new access points and thereby limit turning movements from major roads, traffic congestion, and safety problems.

Section 210-135. Use regulations.

A building may be erected or used or a lot may be used or occupied for any one of the following uses and no other. These uses are further subject to the provisions of Article XX (Floodplain Conservation District); Section 224 of Article XXV (Prohibited uses); Article XXVI (Nonconforming Uses, Buildings, Lots); and Article XXXIII (Access Management Overlay District). In addition, the demolition of or special exception or conditional use for a historic resource shown on the Historic Resources Map, or any subdivision, land development or construction activity within 300 feet of a historic resource, shall be subject to the provisions of Article XIXA (Historic Preservation).

- A. Uses by right (permitted principal uses), unless the use exceeds 10,000 square feet in gross leasable area.
 - (1) Retail store or shop.
 - (2) Retail service or personal service.
 - (3) Office, utility office, or professional office.
 - (4) Studio or broadcasting studio.
 - (5) Bank or financial institution.
 - (6) Club, lodge, or other social institution.
 - (7) Health center, health spa or physical fitness club with a gross floor area of less than 5,000 square feet.
 - (8) Eat-in restaurant, excluding fast food or drive-through establishment.
 - (9) Antique shop.
 - (10) Multiple permitted uses on a single lot.
 - (11) Conversion of a single-family detached dwelling to other permitted uses.

- (12) Uses permitted by right in the R-1 Residence District, provided that such use is in existence before the N-C Neighborhood Commercial District is adopted.
- B. Conditional uses, subject to the provisions of Article XXVII.
 - (1) Day-care center.
 - (2) Educational, religious, or public use.
 - (3) Any single use that exceeds 10,000 square feet in gross leasable area.
- C. Accessory uses.
 - (1) Vehicle parking lots as an accessory use to the principal permitted commercial uses.
 - (2) Accessory use on the same lot with and customarily incidental to any of the above permitted uses, which may include:
 - (a) Storage within a completely enclosed building in conjunction with a permitted site.
 - (b) Living accommodation for the proprietor of a store or business establishment, or for a watchman or caretaker or live work units, provided that no such dwelling accommodation should be located on the first floor.
 - (c) Signs as permitted in Article XXIII (Sign Regulations), subject to the provisions of Article XXXIII (Access Management Overlay District).
- D. Uses by special exception.
 - (1) When authorized by the Zoning Hearing Board, any use of the same general character as those permitted by right (principal permitted uses) and serving the purpose of the N-C Neighborhood Commercial District.
- E. Prohibited uses.

- (1) Any use listed in Section 224 of Article XXV (Prohibited uses).
- (2) Any automobile-oriented use, including gas stations, fast food restaurants, motor vehicle sales and service operations, and similar uses.

Section 210-136. Yard and area regulations.

- A. Lot area and lot width.
 - (1) In areas with sewer service, each lot shall have a lot area of not less than 10,000 square feet, and such lot shall not be less than 25 feet in width at the building line.
 - (2) In areas not covered by sewer service, each lot shall have a lot area of not less than 40,000 square feet, and such lot shall not be less than 50 feet in width at the building line.
 - (3) For uses that are not in areas with sewer service, but can demonstrate that their use of public sewer facilities will be minimal, the Zoning Hearing Board may reduce the required lot size to 10,000 square feet.
- B. Total impervious coverage. The total impervious coverage shall not exceed 55% of the lot area.
- C. Total building area coverage. The building area coverage shall not exceed 35% of the lot area.
- D. Minimum structure setback. Minimum setbacks are not required, except when a side or rear property line directly abuts residential areas or a road. When abutting a residential area or road, a setback of 30 feet shall be provided, subject to the provisions of Article XXXIII (Access Management Overlay District) and Chapter 160, Subdivision and Land Development. Between a lot in the N-C Neighborhood Commercial District and a residential

property, a landscaped buffer is required, in accordance with Article XXI (Landscaping).

- E. Height. No building shall exceed two stories or 35 feet in height.

Section 210-137. Special development regulations.

- A. Buffering. Along each side or rear property line which directly abuts a residential property, a landscaped buffer shall be provided, as defined in Article XXI (Landscaping), subject to the requirements of Chapter 160, Subdivision and Land Development. Parking shall not be permitted within the buffer planting strip. Any part or portion of the site which is not used for buildings, other structures, loading or parking spaces and aisles, sidewalks and designated storage areas shall be landscaped according to an overall landscape plan to be reviewed and evaluated by the Township in accordance with Article XXI (Landscaping) and Chapter 160, Subdivision and Land Development. This landscape plan must also be approved by the Zoning Hearing Board.
- B. Outdoor storage. No storage of merchandise, articles or equipment shall be permitted outside a building, and no goods, articles or equipment shall be stored, displayed or offered for sale beyond the front lines of a building.
- C. Parking. To allow efficient circulation with each cluster of commercial uses, connections between parking lots are required and shared parking agreements are encouraged, according to the following provisions:
- (1) All uses within the site shall be required to follow the provisions for off-street parking, off-street loading and special requirements in Article XXII (Off-Street Parking and Loading Requirements).

- (2) Adjacent uses within the site shall be required to provide access driveways between their parking lots to allow free circulation between all parking lots on the area covered by the N-C Neighborhood Commercial District. Each use shall provide easements for its parking lots and access driveways guaranteeing access and use to all other lots within the site.
- (3) Required parking may be shared in a common parking facility or on an abutting lot, provided such spaces are located within 200 feet of the structure.
- (4) Business may reduce their number of required parking spaces by up to 50% by providing shared parking. The number of spaces required in such a common parking area may be reduced below the sum of the total parking requirements for the uses if it can be demonstrated that peak parking demand for the uses occurs at different times. Common parking is permitted if the following documentation is reviewed by the Township Engineer and Traffic Consultant, and approved by to the Zoning Officer, as part of a building or zoning permit application or land development review:
 - (a) The names and addresses of the uses and of the owners or tenants that are sharing the parking.
 - (b) The location and number of parking spaces that are being shared.
 - (c) An analysis showing that the peak parking demand for the uses occurs at different times and that the parking area will be large enough for the anticipated demands of all uses.
- (5) In situations where shared parking is used, or where the physical layout of the site is appropriate, the applicant may designate the area to be paved to meet the minimum parking without actually paving the spaces, when authorized

as a special exception. This unpaved parking reserve area may include up to 50% of the required parking spaces. The parking reserve area may be permitted by the Zoning Officer if the following conditions are met:

- (a) The applicant must provide documentation that the full number of required parking spaces can be paved without violating any applicable provisions of the Zoning Ordinance.
 - (b) The applicant must agree to install the required number of parking spaces at any future time if the Zoning Officer determines that the additional parking spaces are required.
- (6) Bicycle parking shall be provided by each use at a ratio of at least one (1) bicycle parking rack per use, or 20% of the number of required parking spaces for automobiles, whichever is greater.
- E. Sidewalks. Sidewalks shall be provided at suitable locations within the site to make walking and bicycling as easy and safe as possible, according to the following minimum requirements:
- (1) Sidewalks shall be provided along all lot frontages with roads classified as collectors or local roads. Sidewalks are not required to be provided along primary arterials.
 - (2) Sidewalks shall be provided from all main building entrances to sidewalks along road frontages, not including primary arterials, and also to parking areas, open space, and any other destination that generates pedestrian and bicycle traffic.
 - (3) Sidewalks shall connect to existing sidewalks on abutting tracts and other nearby pedestrian and bicycle destination points and transit stops.
- F. Solid waste disposal. Each use shall comply with the provisions of Section 219 of Article XXIV (Waste Disposal).
- G. Screening of roof objects. Water towers, storage tanks, processing equipment, stand fans, skylights, cooling towers, vents, satellite dishes and any other structures or equipment which rise above the roof line shall be limited to five feet in height and shall be effectively shielded from view from any public or private dedicated street, or any residence, by an architecturally sound method to be submitted by the developer for written approval by the Board of Supervisors before construction.
- H. Architectural design standards. The following guidelines provide insight into the physical and visual qualities which Concord Township prefers for future development in the N-C Neighborhood Commercial District. These are meant as guidance for potential development applicants and to be used by Township officials in the review of conceptual site and architectural plans as part of the site plan review process.
- (1) Along with the subdivision or land development plan, the applicant shall submit for review the architectural drawings for each building and/or addition or renovation.
 - (2) Alignment or orientation of a proposed building should be related to the prevailing orientation of existing buildings, streets, and natural features on the site and in adjacent areas. In general, buildings in this district should be oriented toward the center of the cluster of commercial uses.
 - (3) New buildings or renovations to existing buildings should be of compatible width, height, and architectural style with that of existing and adjacent properties. If more than one business is located in a building, the exterior of the building should be unified in design treatment.

- (4) Single rectangular-shaped buildings with undifferentiated facades should be avoided. Massing should be broken up through the use of gables, indentations, variation of rooflines, wall offsets, and other design techniques. Retail, service and restaurant uses should have large pane display windows on the ground level.
- (5) The organization of the buildings, streets, parking areas, pedestrian walks, service areas, and other site components should have a functional, safe, and harmonious relationship and be compatible with existing site features and adjacent areas.

Article XXXIII

Access Management Overlay District

Section 210-278. Purpose.

The Access Management Overlay District is designed to provide additional regulation of the use, development, and highway access of lands located along the frontage of primary arterial highways located within Concord Township (that is, U.S. Routes 1, 202, and 322), in order to accomplish the following specific purposes:

- A. To enhance the overall function and appearance of primary arterials, which serves as a "gateway" and principal arterial highway through the community.
- B. To minimize hazardous traffic flow conditions and confusion for drivers along primary arterials.
- C. To make the transition between the high-speed, free-flowing driving experience of primary arterials and the lower-speed, more restrictive driving conditions encountered on the intersecting roads, access points and driveways as smooth as possible for highway users.
- D. To promote the orderly and coordinated development of land along primary arterials, and to avoid the adverse effects that uncoordinated, lot-by-lot development can have on the highway.
- E. To provide for safe, understandable and convenient access to abutting uses without causing traffic flow problems.
- F. To promote channelized and coordinated accessways along primary arterials, in order to limit conflicting turning movements, traffic congestion and other potential vehicular hazards.
- G. To encourage reverse-frontage and other design techniques for proposed development to be located along primary arterials, in

order to minimize the need for additional accessways or intersecting roads.

- H. To require, as part of the development plan review process, related traffic control improvements (such as acceleration and deceleration lanes, traffic signalization, marginal access roads, service roads, loop roads, jug handles, turning or stacking lanes and similar low-capital intensive improvements) and public transit enhancements (such as bus pullouts and stops) in order to minimize the effects of new development on traffic flow along primary arterials.
- I. To provide setbacks for both principal and accessory uses, including signs and off-street parking and loading areas in order to facilitate potential widening or related access improvements to primary arterials, should future traffic volumes warrant such improvements.
- J. To require, where feasible, natural features preservation in conjunction with man-made buffering in order to preserve a spacious and scenic visual environment along primary arterials.
- K. To combine with other zoning requirements, as an overlay, to place limitations and additional requirements upon the underlying zoning districts, in order to accomplish the specific purposes described in this Section, in furtherance of the general welfare of the residents of the Township and of the users of primary arterials.

Section 210-280. District coverage.

The Access Management Overlay District shall cover all parcels that are adjacent to the primary arterials located in Concord Township (U.S. Routes 1, 202, and 322). However, for parcels that are greater than two hundred (200) feet deep, the additional regulations of the District shall only apply to the area of these adjacent parcels that is

within two hundred (200) feet of the primary arterial, so long as the intent of the District is not compromised.

Section 210-279. Use regulations.

A. Uses by right (principal permitted uses).

- (1) Any arterial highway and the appurtenant rights-of-way, including the interchange access ramps, service roads and any information or directional signs erected therein.
- (2) Those portions of existing roads of a lower classification than arterial, as defined in Concord Township's comprehensive plan, or existing access driveways. Any improvements to these roads or driveways should comply with the requirements of this Article, to the maximum extent possible.
- (3) Any nonstructural use that is permitted by right in the underlying zoning district and that does not contradict the Purpose of this Article.
- (4) Any structural use permitted by right in the underlying zoning district, subject to the guidelines in Section 280 of this Article.

B. Uses by special exception.

- (1) Off-street parking areas associated with passenger stop or shelter or related public transportation facilities.
- (2) Proposed public or private roads or access driveway that are not consistent with Section 280.
- (3) Parking and loading areas, including above-grade, structured parking facilities.
- (4) Expansion of a use rendered non-conforming by the adoption of this Article.

- (5) Those uses permitted by special exception or as conditional uses in the underlying zoning district.

C. Prohibited uses.

- (1) Junkyards, scrapyards or similar outdoor storage uses.
- (2) Billboards or similar advertising devices or signs that exceed a surface area of one hundred (100) square feet.
- (3) Flashing signs or other advertising devices of any type or configuration.
- (4) Subdivisions and land developments that do not comply with the development regulations specified in Section 280.
- (5) Any use of the same general character as those uses listed above.

Section 210-280. Guidelines for subdivisions, land developments, and individual uses.

For any subdivision, land development or individual uses proposed to be located within the Access Management Overlay District the following guidelines shall apply:

- A. Access controls. Direct driveway access to primary arterials or intersecting roads within the Access Management Overlay District from a subdivision, land development or individual use shall not be permitted, unless the following alternative development techniques are demonstrated by the applicant to be infeasible on other than purely economic grounds. The application of these techniques shall be governed by the requirements of Concord Township's Subdivision and Land Development Ordinance. The following alternatives are presented according to their priority in meeting the Purpose of this Article.

- (1) Marginal access road, where direct driveway access is to a marginal access road parallel to primary arterials. If possible, this marginal access road should not intersect directly with primary arterials, but should feed into a road that intersects the highway at a signalized intersection. Every effort should be made to minimize the number of intersections from marginal access roads within the Access Management Overlay District.
 - (2) Reverse-frontage development, where direct driveway access is to a residential or feeder road in the rear of the properties. If possible, this marginal access road should not intersect directly with primary arterials, but should feed into a road that intersects the highway at a signalized intersection. Every effort should be made to minimize the number of intersections from marginal access roads within the Access Management Overlay District.
 - (3) Joint access, where direct driveway access from a lot or development to primary arterials or an intersecting road within the Access Management Overlay District is provided jointly with other lots or parcels created as part of the same subdivision or land development, or with adjacent lots or parcels not part of the same subdivision of land development. If this approach is to be used, a turnaround area or similar technique shall be provided on the lot.
 - (4) The minimum spacing between the centerline of new and existing roads along primary arterials or an intersecting road within the Access Management Overlay District shall be no less than six hundred (600) feet. No new accessway to primary arterials shall be located closer than two hundred (200) feet to the point of intersection of an intersecting road or access driveway.
- B. Development guidelines. The requirements below are meant as guidelines for potential development applicants and to be used

by Township officials in the review of conceptual site plans as part of the site plan review process. Development proposals that do not meet these guidelines must be reviewed by the Township Engineer or Traffic Consultant and approved by the Zoning Hearing Board. Also, these guidelines can be waived or reduced by the Zoning Hearing Board on sites where development space is limited, such as within loop roads.

- (1) Any proposed use within the Access Management Overlay District shall be set back fifty (50) feet measured from the ultimate right-of-way line of primary arterials and thirty (30) feet from the ultimate right-of-way line of an intersecting road.
- (2) No sign, except a traffic safety or directional sign, and no parking, loading, or other storage area, shall be located closer than twenty-five (25) feet to the ultimate right-of-way line of primary arterials or other intersecting road located within the Access Management Overlay District.

Section 210-281. Guidelines for mitigating actions within the corridor access management overlay district.

The following mitigating actions shall be incorporated with the site development plan for a use proposed to be located within the Access Management Overlay District in order to minimize visual intrusions, traffic flow disruptions and the number and spacing of curb cuts along primary arterials or intersecting roads. These actions may be separate from or in combination with existing natural features, vegetation or topography on the site in question. However, applicants are encouraged to incorporate existing site features as part of any necessary mitigating actions, wherever such an approach is feasible, in order to retain the natural character of the landscape.

- A. Landscaped areas. Landscaping must be provided in new developments along primary arterials according to the provisions

of Article XXI (Landscaping). In addition, the applicant may demonstrate, through the submission of pertinent plans, renderings or models, that the development of the proposed structures, buildings, parking areas or signs will be accomplished in a manner that will be compatible with primary arterials and its surroundings and that will minimize the visual effects on both highway users and the users of the proposed development.

- B. Traffic flow and access study. For any non-residential use and for any residential use involving more than ten (10) dwelling units, the applicant shall prepare a traffic flow and access study, unless the Township Engineer or Traffic Consultant, with the concurring opinion of the Pennsylvania Department of Transportation, District 6-0, shall determine that such a study is not warranted based upon the submitted plan and proposed development. The study shall describe and map the present and projected traffic flow patterns both with and without the proposed development, based upon existing and 10-year projected traffic counts from the Pennsylvania Department of Transportation, the Delaware Valley Regional Planning Commission or the applicant's traffic engineer. The applicant should analyze internal circulation, access needs, and nearby intersections as determined by the Township Engineer or Traffic Consultant. Particular attention shall be placed upon the relationships of the proposed accessways to primary arterials or other intersecting roads located within the Access Management Overlay District. The sources for all traffic flow data, turning movements and projections shall be clearly labeled in the submitted study. The study shall include the rationale for the accessways chosen as well as any alternatives rejected by the applicant.
- C. Driveway spacing. Access management options are listed in order of preference in Section 280(A) of this Article. At the very least, driveways should be spaced a minimum of two hundred (200) feet apart or shared with an adjacent property, unless

rigid adherence to this standard is determined to be either impractical or infeasible, upon the written request of their applicant with the concurrence of the Township Engineer or Traffic Consultant.

- D. Sight distance. Adequate sight distance shall be provided at every accessway and intersecting road, subject to underlying zoning and existing regulations.
- E. Other traffic flow improvements. The applicant is encouraged to submit related traffic flow improvement proposals in conjunction with the traffic flow and access study described above, to mitigate additional internal or external traffic generated by the site. Acceleration and deceleration lanes, traffic signalization, marginal access roads and curbing or stacking lanes are examples of low capital-intensive improvements that would facilitate traffic flow in conjunction with new development. Any such proposed improvements shall be reviewed and approved by the Township Engineer, with the advice of Pennsylvania Department of Transportation District 6-0 staff, except on state maintained roads, where final approval shall be obtained from the Pennsylvania Department of Transportation.

Section 210-282. Uses or structures rendered non-conforming by the adoption of this article.

Following the adoption of this Article, any use or structure which is situated within the boundaries of the Access Management Overlay District and which does not conform to the permitted uses specified in Section 279 of this Article shall become a non-conforming use or structure, regardless of its conformance with the requirements of the underlying zoning district in which it is located.

- A. The expansion or continuance of a non-conforming use or structure which is non-conforming with respect to the other zoning districts in which it is located without consideration of this

Article, shall be governed by the requirements of Article XXVI (Nonconforming Uses, Buildings, Lots) of this Ordinance.

- B. The expansion or continuance of a non-conforming use or structure that is rendered non-conforming due to the adoption of this Article shall be treated as a special exception, and shall be covered by the process described in Article XXVIII (Zoning Hearing Board – Variances, Special Exceptions, Appeals).

Bethel Township

The implementation documents for Bethel Township were developed during the Implementation phase of the Route 322 Land Use Strategies Study, conducted between July 2001 and June 2002. DVRPC and Delaware County Planning Department staff attended several regular meetings of the Bethel Township Planning Commission during this period, determined the needs of the Township, and drafted amendments to the municipal Comprehensive Plan and Zoning Ordinance to meet these needs. The documents contained in this section of Appendix A have been modified based on these meetings. DVRPC encourages Bethel Township to continue to modify these documents, and to adopt them as amendments to the Comprehensive Plan or Zoning Ordinance.

The documents contained in this section include the following:

Comprehensive Plan Amendments

Additions to Chapter IV – Development Goals and Objectives, Transportation section and Land Use section:

- Describes functional conflicts on Route 322, used as both regional highway and local commercial center
- Describes rezoning of land on south side of Route 322, between Route 261 and Upper Chichester boundary, to C-2 General Business use
- Recommends marginal access road, paralleling Route 322, to provide access to businesses in C-2 zone while maintaining safe and efficient travel on the highway
- References *Route 322 Land Use Strategies Study*

Modifications to Article XII: C-2 General Business District

- Applies to south side of Route 322, between Route 261 and Upper Chichester Township boundary – rezoned to C-2 during summer 2001
- Requires each business in district to construct segment of marginal access road, described in Comprehensive Plan and shown on Official Map (note: Official Map does not now exist, but is recommended by DVRPC)
- Allows shared parking, requires connections between parking lots, and requires bicycle parking and sidewalks

Article XXI: Access Management Overlay District

- Provides additional regulations on land use and access among parcels adjacent to Route 322
- Similar to Access Management Overlay Districts recommended for Concord and Upper Chichester Townships

Comprehensive Plan Amendments

Replace Chapter IV – Development Goals and Objectives, A. Transportation, paragraph 3 with the following:

The only arterial street running through the Township is Conchester Pike, Route 322, which intersects Foulk Road and runs northwest to Route 1 and Southeast to Interstate 95. The primary function of this arterial is to provide mobility through the western portion of Delaware County and the Philadelphia region. Its secondary function is to provide access to local properties. Often these two functions are in conflict and a balance between the two must be realized.

Because of this conflict in function, land use along Route 322 must be carefully coordinated with PennDOT's plans to improve it into a controlled access highway. A controlled access highway is a roadway that is designed to control vehicle access and movement through its design. Techniques include limiting the number of driveways and on/off ramps, installing protected left turn lanes, separating opposing lanes with concrete barriers, installing traffic control devices, and others.

Ideally, a PennDOT constructed marginal access road paralleling Route 322 on its south side between Foulk Road and Creek Parkway in Upper Chichester Township would achieve PennDOT's desired unrestricted and safe vehicle flow on Route 322 as well as provide convenient access to the commercial properties that front the highway. In support of building such a road, the Township should consider adopting an access management overlay district to further regulate vehicle access to the highway from adjacent businesses and residences. More details on these objectives are found in the *Route 322 Land Use Strategies Study*, published by the Delaware Valley Regional Planning Commission with the assistance of the Delaware County Planning Department in June 2002.

Replace Chapter IV – Development Goals and Objectives, B. Land Use, paragraph 2 with the following:

On the south side of Route 322, an area is zoned for this type of commercial use. Since there are few areas zoned commercial, the success of this area, which is primarily dependent on convenient access to Route 322, is vital to Bethel's overall economic health. The commercial uses of this area are intended to primarily serve the needs of residents who currently must travel outside the boundaries of Bethel for services and shopping opportunities, as well as providing goods and services that are most used by long distance commuters. These businesses include, but are not limited to retail stores, banks, restaurants, beauty shop, dry-cleaning stores, day care centers, and gas stations. To flourish, these businesses must be conveniently accessible from the planned marginal access road as previously described in the Transportation subsection. Specific recommendations linking land use and transportation can be found in the *Route 322 Land Use Strategies Study*, published by the Delaware Valley Regional Planning Commission with the assistance of the Delaware County Planning Department in June 2002.

Modifications to Article XII
C-2 General Business District

Add text to subsection 3.a of Section 1202:

a. Access

All uses are subject to the regulations of Article XXI (Access Management Overlay District). Also, each use shall construct a segment of the parallel access road described in the Official Map Ordinance, and shall provide connections between its parking lot and this parallel access road.

Add subsections 3.f and 3.g to Section 1202:

f. Parking

To allow efficient circulation within each cluster of commercial uses, connections between parking lots are required and shared parking agreements are encouraged, according to the following provisions:

- (1) All uses within the site shall be required to follow the provisions for off-street parking, off-street loading and special requirements in Article XVIII (Off-Street Parking and Loading).
- (2) Adjacent uses within the site shall be required to provide access driveways between their parking lots to allow free circulation between all parking lots. Each use shall provide easements for its parking lots and access driveways guaranteeing access and use to all other lots within the site.
- (3) Required parking may be shared in a common parking facility or on an abutting lot, provided such spaces are located within 200 feet of the structure.

- (4) Businesses may reduce their number of required parking spaces by up to 50% by providing shared parking. The number of spaces required in such a common parking area may be reduced below the sum of the total parking requirements for the uses if it can be demonstrated that peak parking demand for the uses occurs at different times. Common parking is permitted if the following documentation is reviewed by the Township Engineer, and approved by to the Zoning Officer, as part of a building or zoning permit application or land development review:
 - (a) The names and addresses of the uses and of the owners or tenants that are sharing the parking.
 - (b) The location and number of parking spaces that are being shared.
 - (c) An analysis showing that the peak parking demand for the uses occurs at different times and that the parking area will be large enough for the anticipated demands of all uses.
- (5) In situations where shared parking is used, or where the physical layout of the site is appropriate, the applicant may designate the area to be paved to meet the minimum parking without actually paving the spaces, when authorized as a special exception. This unpaved parking reserve area may include up to 50% of the required parking spaces. The parking reserve area may be permitted by the Zoning Officer if the following conditions are met:
 - (a) The applicant must provide documentation that the full number of required parking spaces can be paved without violating any applicable provisions of the Zoning Ordinance.

(b) The applicant must agree to install the required number of parking spaces at any future time if the Zoning Officer determines that the additional parking spaces are required.

(6) Bicycle parking shall be provided by each use at a ratio of at least one (1) bicycle parking rack per use, or 20% of the number of required parking spaces for automobiles, whichever is greater.

g. Sidewalks

Sidewalks shall be provided at suitable locations within the site to make walking and bicycling as convenient and safe as possible, according to the following minimum requirements:

(1) Sidewalks shall be provided from all main building entrances to parking areas, open space, and any other destination that generates pedestrian or bicycle traffic.

(2) Sidewalks shall connect to existing sidewalks on abutting tracts and other nearby pedestrian and bicycle destination points and transit stops.

Article XXI

Access Management Overlay District

Section 2101. Purpose.

The Access Management Overlay District is designed to provide additional regulation of the use, development, and highway access of lands located along the frontage of Route 322 within Bethel Township, in order to accomplish the following specific purposes:

1. To enhance the overall function and appearance of Route 322, which serves as a "gateway" and principal arterial highway through the community.
2. To minimize hazardous traffic flow conditions and confusion for drivers along Route 322.
3. To make the transition between the high-speed, free-flowing driving experience of Route 322 and the lower-speed, more restrictive driving conditions encountered on the intersecting roads, access points and driveways as smooth as possible for highway users.
4. To promote the orderly and coordinated development of land along Route 322, and to avoid the adverse effects that uncoordinated, lot-by-lot development can have on the highway.
5. To provide for safe, understandable and convenient access to abutting uses without causing traffic flow problems.
6. To promote channelized and coordinated accessways along Route 322, in order to limit conflicting turning movements, traffic congestion and other potential vehicular hazards.
7. To encourage reverse-frontage and other design techniques for proposed development to be located along Route 322, in order to minimize the need for additional accessways or intersecting roads.
8. To require, as part of the development plan review process, related traffic control improvements (such as acceleration and deceleration lanes, traffic signalization, marginal access roads, service roads, loop roads, jug handles, turning or stacking lanes and similar low-capital intensive improvements) and public transit enhancements (such as bus pullouts and stops) in order to minimize the effects of new development on traffic flow along Route 322.
9. To provide setbacks for both principal and accessory uses, including signs and off-street parking and loading areas in order to facilitate potential widening or related access improvements to primary arterials, should future traffic volumes warrant such improvements.
10. To require, where feasible, natural features preservation in conjunction with man-made buffering in order to preserve a spacious and scenic visual environment along Route 322.
11. To combine with other zoning requirements, as an overlay, to place limitations and additional requirements upon the underlying zoning districts, in order to accomplish the specific purposes described in this Article, in furtherance of the general welfare of the residents of the Township and of the users of Route 322.

Section 2102. District coverage.

The Access Management Overlay District shall cover all parcels that are adjacent to Route 322 in Bethel Township. However, for parcels that are greater than two hundred (200) feet deep, the additional regulations of the District shall only apply to the area of these adjacent parcels that is within two hundred (200) feet of the primary arterial, so long as the intent of the District is not compromised.

Section 2103. Use regulations.

A building may be erected, altered or used, and land may be used, for any of the following purposes and no other:

1. Permitted Principal Uses
 - a. Any arterial highway and the appurtenant rights-of-way, including the interchange access ramps, service roads and any information or directional signs erected therein.
 - b. Those portions of existing roads of a lower classification than arterial, as defined in Bethel Township's comprehensive plan, or existing access driveways. Any improvements to these roads or driveways should comply with the requirements of this Article, to the maximum extent possible.
 - c. Any nonstructural use that is permitted by right in the underlying zoning district and that does not contradict the Purpose of this Article.
 - d. Any structural use permitted by right in the underlying zoning district, subject to the guidelines in Section 2104 of this Article.
2. Uses Permitted by Special Exception
 - a. Off-street parking areas associated with passenger stop or shelter or related public transportation facilities.
 - b. Proposed public or private roads or access driveway that are not consistent with Section 280.
 - c. Parking and loading areas, including above-grade, structured parking facilities.
 - d. Expansion of a use rendered non-conforming by the adoption of this Article.

- e. Those uses permitted by special exception or as conditional uses in the underlying zoning district.

3. Prohibited Uses

- a. Junkyards, scrapyards or similar outdoor storage uses.
 - b. Billboards or similar advertising devices or signs that exceed a surface area of one hundred (100) square feet.
 - c. Flashing signs or other advertising devices of any type or configuration.
 - d. Subdivisions and land developments that do not comply with the development regulations specified in Section 2104.
 - e. Any use of the same general character as those uses listed above.

Section 2104. Guidelines for subdivisions, land developments, and individual uses.

For any subdivision, land development or individual uses proposed to be located within the Access Management Overlay District the following guidelines shall apply:

1. Access controls

Direct driveway access to Route 322 or intersecting roads within the Access Management Overlay District from a subdivision, land development or individual use shall not be permitted, unless the following alternative development techniques are demonstrated by the applicant to be infeasible on other than purely economic grounds. The application of these techniques shall be governed by the requirements of Bethel Township's Subdivision and Land Development Ordinance. The following alternatives are presented according to their priority in meeting the Purpose of this Article.

- a. Marginal access road, where direct driveway access is to a marginal access road parallel to Route 322. If possible, this marginal access road should not intersect directly with Route 322, but should feed into a road that intersects the highway at a signalized intersection. Every effort should be made to minimize the number of intersections from marginal access roads within the Access Management Overlay District.
- b. Reverse-frontage development, where direct driveway access is to a residential or feeder road in the rear of the properties. If possible, this marginal access road should not intersect directly with Route 322, but should feed into a road that intersects the highway at a signalized intersection. Every effort should be made to minimize the number of intersections from marginal access roads within the Access Management Overlay District.
- c. Joint access, where direct driveway access from a lot or development to Route 322 or an intersecting road within the Access Management Overlay District is provided jointly with other lots or parcels created as part of the same subdivision or land development, or with adjacent lots or parcels not part of the same subdivision of land development. If this approach is to be used, a turnaround area or similar technique shall be provided on the lot.
- d. The minimum spacing between the centerline of new and existing roads along Route 322 or an intersecting road within the Access Management Overlay District shall be no less than six hundred (600) feet. No new accessway to Route 322 shall be located closer than two hundred (200) feet to the point of intersection of an intersecting road or access driveway.

2. Development guidelines

The requirements below are meant as guidelines for potential development applicants and to be used by Township officials in the review of conceptual site plans as part of the site plan review process. Development proposals that do not meet these guidelines must be reviewed by the Township Engineer or Traffic Consultant and approved by the Zoning Hearing Board. Also, these guidelines can be waived or reduced by the Zoning Hearing Board on sites where development space is limited.

- a. Any proposed use within the Access Management Overlay District shall be set back fifty (50) feet measured from the ultimate right-of-way line of Route 322 and thirty (30) feet from the ultimate right-of-way line of an intersecting road.
- b. No sign, except a traffic safety or directional sign, and no parking, loading, or other storage area, shall be located closer than twenty-five (25) feet to the ultimate right-of-way line of Route 322 or other intersecting road located within the Access Management Overlay District.

Section 2105. Guidelines for mitigating actions within the Access Management Overlay District.

The following mitigating actions shall be incorporated with the site development plan for a use proposed to be located within the Access Management Overlay District in order to minimize visual intrusions, traffic flow disruptions and the number and spacing of curb cuts along Route 322 or intersecting roads. These actions may be separate from or in combination with existing natural features, vegetation or topography on the site in question. However, applicants are encouraged to incorporate existing site features as part of any necessary mitigating actions, wherever such an approach is feasible, in order to retain the natural character of the landscape.

1. Landscaped areas

Landscaping must be provided in new developments along Route 322 according to the Subdivision and Land Development Ordinance. In addition, the applicant may demonstrate, through the submission of pertinent plans, renderings or models, that the development of the proposed structures, buildings, parking areas or signs will be accomplished in a manner that will be compatible with Route 322 and its surroundings and that will minimize the visual effects on both highway users and the users of the proposed development.

2. Traffic flow and access study

For any non-residential use and for any residential use involving more than ten (10) dwelling units, the applicant shall prepare a traffic flow and access study, unless the Township Engineer or Traffic Consultant, with the concurring opinion of the Pennsylvania Department of Transportation, District 6-0, shall determine that such a study is not warranted based upon the submitted plan and proposed development. The study shall describe and map the present and projected traffic flow patterns both with and without the proposed development, based upon existing and 10-year projected traffic counts from the Pennsylvania Department of Transportation, the Delaware Valley Regional Planning Commission or the applicant's traffic engineer. The applicant should analyze internal circulation, access needs, and nearby intersections as determined by the Township Engineer or Traffic Consultant. Particular attention shall be placed upon the relationships of the proposed accessways to Route 322 or other intersecting roads located within the Access Management Overlay District. The sources for all traffic flow data, turning movements and projections shall be clearly labeled in the submitted study. The study shall include the rationale for the accessways chosen as well as any alternatives rejected by the applicant.

3. Driveway spacing

Access management options are listed in order of preference in Section 280(A) of this Article. At the very least, driveways should be spaced a minimum of two hundred (200) feet apart or shared with an adjacent property, unless rigid adherence to this standard is determined to be either impractical or infeasible, upon the written request of their applicant with the concurrence of the Township Engineer or Traffic Consultant.

4. Sight distance

Adequate sight distance shall be provided at every accessway and intersecting road, subject to underlying zoning and existing regulations.

5. Other traffic flow improvements

The applicant is encouraged to submit related traffic flow improvement proposals in conjunction with the traffic flow and access study described above, to mitigate additional internal or external traffic generated by the site. Acceleration and deceleration lanes, traffic signalization, marginal access roads and curbing or stacking lanes are examples of low capital-intensive improvements that would facilitate traffic flow in conjunction with new development. Any such proposed improvements shall be reviewed and approved by the Township Engineer, with the advice of Pennsylvania Department of Transportation District 6-0 staff, except on state maintained roads, where final approval shall be obtained from the Pennsylvania Department of Transportation.

Section 2106. Uses or structures rendered non-conforming by the adoption of this Article.

Following the adoption of this Article, any use or structure which is situated within the boundaries of the Access Management Overlay District and which does not conform to the permitted uses specified in Section 2102 of this Article shall become a non-conforming use or

structure, regardless of its conformance with the requirements of the underlying zoning district in which it is located.

1. The expansion or continuance of a non-conforming use or structure which is non-conforming with respect to the other zoning districts in which it is located without consideration of this Article, shall be governed by the existing requirements of this Ordinance.
2. The expansion or continuance of a non-conforming use or structure that is rendered non-conforming due to the adoption of this Article shall be treated as a special exception, and shall be covered by the process described in Article II (Zoning Hearing Board).

Upper Chichester Township

The implementation documents for Upper Chichester Township were developed during the Implementation phase of the Route 322 Land Use Strategies Study, conducted between July 2001 and June 2002. DVRPC and Delaware County Planning Department staff attended several regular meetings of the Upper Chichester Route 322 Task Force during this period, determined the needs of the Township, and drafted amendments to the municipal Comprehensive Plan and Zoning Ordinance to meet these needs. The documents contained in this section of Appendix A have been modified based on these meetings. DVRPC encourages Upper Chichester Township to continue to modify these documents, and to adopt them as amendments to the Comprehensive Plan or Zoning Ordinance.

The documents contained in this section include the following:

Comprehensive Plan Amendments

Additions to “A Plan for Circulation”:

- Describes functional conflicts on Route 322, used as both regional highway and local commercial center
- Describes importance of controlling access, and recommends adoption of Access Management Overlay District
- References *Route 322 Land Use Strategies Study*

Additions to “A Plan for Land Use”, Agriculture section:

- Describes importance of preserving agriculture to Upper Chichester Township
- Cites recent revision to Municipalities Planning Code, which states in Section 603(g)(1) that “Zoning ordinances shall protect prime agricultural land and may promote the establishment of Agricultural Security Districts.”
- Recommends amendments to zoning ordinance to meet agricultural preservation goals

Article 1201 – Agricultural Preservation District

- Applies to areas currently in agricultural use, especially those with prime agricultural soils (rated Class I or Class II by United States Department of Agriculture).
- Permits agriculture as a primary use, and requires 10-acre minimum lot sizes on prime agricultural soils.
- Allows landowners to “split off” parcels that are not on prime agricultural soils, and allows these parcels to be developed according to regulations that are consistent with adjacent residential or commercial districts.
- Requires residential developments of more than five units to be permitted only by special exception, rather than as primary use.

Modifications to Article 800 – C-1 Neighborhood Commercial District

- Allows small-scale, locally-oriented businesses along Route 322, directed primarily toward the surrounding neighborhood, rather than the highway
- Discourages big-box stores by regulating maximum floor space
- Allows shared parking, requires connections between parking lots, and requires bicycle parking and sidewalks
- Provides architectural design standards to guide appearance of buildings

Article 1401 – Access Management Overlay District

- Provides additional regulations on land use and access among parcels adjacent to Route 322
- Similar to Access Management Overlay Districts recommended for Bethel and Concord Townships

Comprehensive Plan Amendments

Add section to "A Plan for Land Use" (p. 33):

Agriculture

Land planned for future agricultural use is shown in Figure 2. Since the adoption of Upper Chichester Township's *1990 Comprehensive Plan*, the Township has experienced growth that has consumed much of its open space and farmlands. This consumptive use of land has left only a few agricultural areas untouched by development. To preserve its farming heritage and protect its remaining prime agricultural soils (See Figure 2A), the Township has made the preservation of farms with prime agricultural soils a priority.

The benefits of protecting these remaining agricultural areas go far beyond the obvious ones of food production and employment opportunities. Farmland also provides good conditions for groundwater recharge, water quality management, and flood control. Also, farmland is important for its scenic value, as well as its role in forming local identity. Finally, preserving agriculture is fiscally responsible, with long-term financial benefits.

In recognition of the importance of agricultural areas to a community's vitality and its residents' overall quality of life, the Municipalities Planning Code, as amended by Acts 67 and 68 in June of 2000, states in Section 603(g)(1) that "Zoning ordinances shall protect prime agricultural land and may promote the establishment of agricultural security areas." In compliance with this mandate, Upper Chichester Township has adopted the AG Agricultural Preservation District for parcels containing prime agricultural land. This zoning district permits agriculture as a primary use and preserves farmland.

Furthermore, the amended Municipalities Planning Code also states in Section 303(d) that “Municipal zoning, subdivision and land development regulations, and capital improvement programs shall generally implement the municipal and multimunicipal comprehensive plan.” In compliance with this requirement for consistency, Upper Chichester Township has modified its comprehensive plan to identify agriculture as a planned future land use in areas with prime agricultural soils.

Modify Figure 2 (Comprehensive Plan) to reflect above text and commercially zoned property at intersection of Route 322 and Sommers Lane. Add Figure 2A, showing prime agricultural soils.

Add section to “A Plan for Circulation” after 1st paragraph (p. 41):

Roads have two main service functions: to provide mobility and to provide access to land. Often, these two functions are in conflict. In Upper Chichester, this conflict is especially clear along Route 322. While it is used as a regional throughway, Route 322 also serves as the commercial base for Upper Chichester Township.

Replace 2nd paragraph (p.41):

Four types of improvements are indicated in Figure 5 including: intersection safety improvements; cartway improvements; access management overlay districts; and other directional, speed limit and parking recommendations. Much of the information for these improvement suggestions were derived from information supplied by the Upper Chichester Township Engineer and Township Police Department in December 1990 and the *Route 322 Land Use Strategies Study*, published by the Delaware Valley Regional Planning Commission with the assistance of the Delaware County Planning Department in June 2002.

Replace Number 5 (p. 42):

Route 322 continues to experience problems due to the conflict in its service functions. The primary function of this arterial is to provide mobility through the western portion of Delaware County and the Philadelphia region. Its secondary function is to provide access to local properties. Often these two functions are in conflict and a balance between the two must be realized.

Because of this conflict in service function, land use along Route 322 must be carefully coordinated with PennDOT’s plans to improve it into a controlled access highway. A controlled access highway is a roadway that controls vehicle access and movement through its design. Techniques include limiting the number of driveways and on/off ramps, installing protected left turn lanes, separating opposing lanes with concrete barriers, installing traffic control devices, and others.

To help facilitate this balance in service function, the Township should consider adopting an access management overlay district. More details on this district are found in the *Route 322 Land Use Strategies Study*, published by the Delaware Valley Regional Planning Commission with the assistance of the Delaware County Planning Department in June 2002.

Modify Figure 5 to highlight the proposed access management overlay district along Route 322.

Article 1201

AG Agricultural Preservation District

1201.01. District Purposes.

The purposes of this district are to implement the goals and intent of the Comprehensive Plan of Upper Chichester Township; to preserve high-quality agricultural soils, particularly Class I and Class II soils, as natural resources; to direct development away from prime agricultural soils; to support agricultural activities, including commercial activities that involve the sale of farm products; and to preserve open space.

1201.02. Uses Permitted by Right.

Land, building or premises shall be used by right only for one or more of the following uses:

1. General agriculture, including the growing of crops, horticulture, silviculture, and the keeping of livestock, and excluding intensive agriculture, defined below.
2. Farm building.
3. Greenhouses and plant nurseries.
4. Sale of agricultural products.
5. Single-family detached dwelling.
6. Educational or religious use.
7. Municipal or public use.
8. Recreation, park or play area, or other conservation activity or open space use.

1201.03. Uses Permitted by Special Exception.

The following uses shall be permitted by special exception only, subject to the applicable provisions of Articles 1800 (Conditions and Standards for Special Exceptions) and 2100 (Zoning Hearing Board):

1. Agricultural research facility.
2. Commercial kennel, stable, or livestock sales facility.
3. Veterinary office.
4. Secondary farm business on agricultural lot, such as machine repair shop, craftsmen shop, or farm equipment sales or service.
5. Conversion of single-family detached dwelling to other permitted use, subject to Article 1800.11.
6. Home occupation.
7. Temporary community event, such as fair or festival.
8. Sewage disposal facility using spray irrigation.
9. Any development proposal for more than five (5) single-family detached dwelling units.

1201.04. Accessory Uses.

1. Off-street parking or private garage, subject to Article 1500 (Parking Regulations).
2. Signs, subject to Article 1600 (Signs).
3. Private swimming pool, subject to Article 1700.15 (Regulations for Private, Non-Commercial Swimming Pools).
4. Dwelling for farm employee and family.
5. Other customary residential and agricultural accessory structures, such as barn or utility shed.

1201.05. Area and Bulk Regulations.

Unless specifically stated otherwise, the following shall be minimum requirements:

1. Dimensions for agricultural use:

- a. Lot area - Ten (10) acres
- b. Lot width - Two hundred (200) feet
- c. Street frontage - One hundred (100) feet
- d. Front yard - Fifty (50) feet to any building
- e. Side yards - Thirty-five (35) feet on each side
- f. Rear yard - Fifty (50) feet to any building
- g. Building coverage - Eight (8) percent, maximum
- h. Height (habitable structures) - Thirty-five (35) feet, maximum
- i. Height (barns and silos) - No maximum height

2. Dimensions for non-agricultural use located on lands with prime agricultural soils. Any residential or non-residential use proposed on a lot that is more than 25% Class I and Class II soils must follow these development regulations:

- a. Lot size - Ten (10) acres
- b. Lot width - Two hundred (200) feet
- c. Street frontage - One hundred (100) feet
- d. Front yard - Fifty (50) feet
- e. Side yards - Thirty-five (35) feet on each side
- f. Rear yard - Fifty (50) feet
- g. Building coverage - Ten (10) percent, maximum

- h. Height - Thirty-five (35) feet, maximum

3. Dimensions for detached single-family dwellings located on lands that are not prime agricultural soils. Any residential use proposed on a lot that is less than 25% Class I and Class II soils must follow these development regulations:

- a. Lot size - Twenty thousand (20,000) square feet
- b. Lot width - One hundred (100) feet
- c. Street frontage - Fifty (50) feet
- d. Front yard - Fifty (50) feet
- e. Side yards - Twenty (20) feet on each side
- f. Rear yard - Seventy-five (75) feet
- g. Building coverage - Fifteen (15) percent, maximum
- h. Height - Thirty-five (35) feet, maximum

4. Dimensions for other nonresidential uses (such as veterinary office, municipal building, or other use) located on lands that are not prime agricultural soils. Any nonresidential use proposed on a lot that is less than 25% Class I and Class II soils must follow these development regulations:

- a. Lot size - One (1) acre
- b. Lot width - Two hundred (200) feet
- c. Street frontage - Fifty (50) feet
- d. Impervious surface coverage - Seventy (70) percent, max.
- e. Front yard - Fifty (50) feet
- f. Side yards - Twenty-five (25) feet on each side
- g. Rear yard - Fifty (50) feet
- h. Building coverage - Thirty (30) percent, maximum

- i. Height - Thirty-five (35) feet, maximum

1201.06. Special Development Regulations.

1. Nonagricultural development. In accordance with the stated purpose of this article, to preserve agricultural soils and agricultural activities, nonagricultural development must comply with the following regulations:
 - a. Prior to subdivision, the applicant shall identify the location of all Class I and Class II soils upon the parcel to be subdivided. The applicant shall indicate the percentage of Class I and Class II soils contained within the parcel. This percentage shall be used to determine minimum lot sizes, as described in Article 1201.05.
 - b. Nonagricultural lots shall be situated to create the least disruption to remaining nearby agricultural operations.
2. Additional agricultural regulations. Certain agricultural operations must comply with the following regulations:
 - a. All grazing and pasture areas shall be fenced.
 - b. The storage of manure or a similar odor- or dust-producing substance, or the operation of a slaughter area, shall not be permitted within two hundred (200) feet of any abutting property.
 - c. As agriculture is the primary use of this district, the future development of adjoining properties should not adversely affect the use of any property for agricultural purposes.
 - d. Existing agricultural activities are exempt from these requirements.
 - e. This district is exempt from the requirements of Article 1700.12 (Restrictions on the Keeping of Animals).
3. Sale of farm products. The display and sale of farm products is permitted by right provided that:
 - a. At least fifty (50) percent of the products shall have been produced on the property on which they are offered for sale.
 - b. Structures for the sale of agricultural products shall conform to the building setback requirements in Article 1201.05.
 - c. Off-street parking shall be provided in accordance with the requirements of Article 1500 (Parking Regulations), and signs shall be permitted in accordance with the requirements of Article 1600 (Signs).
 - d. This district is exempt from the requirements of Article 1700.13 (Agriculture).
4. Development proposals for five (5) or more dwelling units. Although single-family detached dwellings are a permitted use, development proposals for five (5) or more of these units shall be permitted only by special exception.

Modifications to Article 800
C-1 Neighborhood Commercial District

Replace original paragraph of Section 800.01 (District Purposes):

The purpose of this District is to provide retail, service, and other commercial facilities for local residents and those of neighboring communities in a way that is consistent with the goals and intent of the Comprehensive Plan of Upper Chichester Township. This District seeks to accomplish the following specific purposes:

1. To promote clustered, smaller-scale commercial areas in appropriate neighborhoods.
2. To integrate these neighborhood commercial clusters into the surrounding residential neighborhoods by encouraging the layout and site design of these clusters for compatibility with the Township's community character.
3. To encourage the local use of businesses, while avoiding strip commercial and large "big box"-scale retail development.
4. To make each neighborhood commercial cluster more walkable and bikeable by providing pedestrian and bicycle connections.
5. To manage vehicle access to major roadways, minimize new access points and thereby limit hazardous turning movements from major roads, traffic congestion, and safety problems.

Add text to subsection 1 of Section 800.02 (Uses Permitted by Right):

1. Retail store, including general merchandise store, hardware, pharmacy or variety store, provided that no single use exceeds 10,000 square feet in gross leasable area.

Replace subsection 3 of Section 800.02 (Uses Permitted by Right):

3. Eating or drinking establishment, including tavern and sit-down restaurant, but excluding fast food or drive-through establishment.

Add subsection 10 to Section 800.02 (Uses Permitted by Right):

10. Mixed use building with permitted commercial or office use on the first floor and residential dwelling units on upper floors.

Add subsection 9 to Section 800.03 (Uses Permitted by Special Exception):

9. Any permitted use that exceeds 10,000 square feet in gross leasable area.

Remove subsection 5 (concerning satellite antenna) of Section 800.04 (Accessory Uses).

Replace Section 800.05 (Area and Bulk Regulations):

1. Detached commercial buildings
 - a. Lot size - Ten thousand (10,000) square feet
 - b. Lot width - Twenty-five (25) feet
 - c. Building coverage - Thirty-five (35) percent, maximum
 - d. Impervious surface coverage - Seventy-five (75) percent, max.
 - e. Height - Thirty-five (35) feet, maximum
 - f. Setbacks (front, side, and rear) are not required unless the property line abuts a residential area or road. When abutting

a residential area, a setback shall be provided, subject to the regulations of Article 800.06. When abutting a road, a setback of thirty (30) feet shall be provided. All setbacks shall be landscaped subject to Article 1700.18 (General Landscaping and Plan Requirements).

2. Attached commercial buildings

- a. Tract size - Thirty thousand (30,000) square feet
- b. Tract width - Seventy-five (75) feet
- c. Building coverage - Twenty-five (25) percent, maximum
- d. Impervious surface coverage - Seventy (70) percent, max
- e. Height - Thirty-five (35) feet, maximum
- f. Setbacks (front, side, and rear) are not required unless the property line abuts a residential area or road. When abutting a residential area, a setback shall be provided, subject to the regulations of Article 800.06. When abutting a road, a setback of thirty (30) feet shall be provided. All setbacks shall be landscaped subject to Article 1700.18 (General Landscaping and Plan Requirements).

Add subsection 3, 4, and 5 to Section 800.06 (Special Development Regulations):

3. Parking. To allow efficient circulation with each cluster of commercial uses, connections between parking lots are required and shared parking agreements are encouraged, according to the following provisions:
- a. All uses within the site shall be required to follow the provisions for off-street parking, off-street loading and special requirements in Article 1500 (Parking Regulations).

- b. Adjacent uses within the site shall be required to provide access driveways between their parking lots to allow free circulation between all parking lots in the District. Each use shall provide easements for its parking lots and access driveways guaranteeing access and use to all other lots within the site.
- c. Required parking may be shared in a common parking facility or on an abutting lot, provided such spaces are located within 200 feet of the structure.
- d. Business may reduce their number of required parking spaces by up to 50% by providing shared parking. The number of spaces required in such a common parking area may be reduced below the sum of the total parking requirements for the uses if it can be demonstrated that peak parking demand for the uses occurs at different times. Common parking is permitted if the following documentation is reviewed by the Township Engineer or Traffic Consultant, and approved by to the Zoning Hearing Board, as part of a building or zoning permit application or land development review:
 - 1. The names and addresses of the uses and of the owners or tenants that are sharing the parking.
 - 2. The location and number of parking spaces that are being shared.
 - 3. An analysis showing that the peak parking demand for the uses occurs at different times and that the parking area will be large enough for the anticipated demands of all uses.
- e. In situations where shared parking is used, or where the physical layout of the site is appropriate, the applicant may designate an area to be paved as "parking reserve" to meet the minimum parking without actually paving the spaces, when authorized as a special exception. This unpaved

parking reserve area may include up to 50% of the required parking spaces. The parking reserve area may be permitted by the Zoning Hearing Board if the following conditions are met:

1. The applicant must provide documentation that the full number of required parking spaces can be paved without violating any applicable provisions of the Zoning Ordinance.
 2. The applicant must agree to install the required number of parking spaces at any future time if the Zoning Officer determines that the additional parking spaces are required.
 - f. Bicycle parking shall be provided by each use at a ratio of at least one (1) bicycle parking rack per use, or 20% of the number of required parking spaces for automobiles, whichever is greater.
4. Sidewalks. Sidewalks shall be provided at suitable locations within the site to make walking and bicycling as easy and safe as possible, according to the following minimum requirements:
- a. Sidewalks shall be provided along all lot frontages with roads classified as collectors or local roads. Sidewalks are not required to be provided along primary arterials.
 - b. Sidewalks shall be provided from all main building entrances to sidewalks along road frontages, not including primary arterials, and also to parking areas, open space, and any other destination that generates pedestrian and bicycle traffic.
 - c. Sidewalks shall connect to existing sidewalks on abutting tracts and other nearby pedestrian and bicycle destination points and transit stops.
5. Architectural design standards. The following guidelines provide insight into the physical and visual qualities which Upper Chichester Township prefers for future development in the District. These are meant as guidance for potential development applicants and to be used by Township officials in the review of conceptual site and architectural plans as part of the site plan review process.
- a. Along with the subdivision or land development plan, the applicant shall submit for review the architectural drawings for each building and/or addition or renovation.
 - b. Alignment or orientation of a proposed building should be related to the prevailing orientation of existing buildings, streets, and natural features on the site and in adjacent areas. In general, buildings in this district should be oriented toward the center of the cluster of commercial uses.
 - c. New buildings or renovations to existing buildings should be of compatible width, height, and architectural style with that of existing and adjacent properties. If more than one business is located in a building, the exterior of the building should be unified in design treatment.
 - d. Single rectangular-shaped buildings with undifferentiated facades should be avoided. Massing should be broken up through the use of gables, indentations, variation of rooflines, wall offsets, and other design techniques. Retail, service, and restaurant uses should have large pane display windows on the ground level.
 - e. The organization of the buildings, streets, parking areas, pedestrian walks, service areas, and other site components should have a functional, safe, and harmonious relationship and be compatible with existing site features and adjacent areas.

Article 1401

Access Management Overlay District

1401.01. District Purposes.

The Access Management Overlay District is designed to provide additional regulation of the use, development, and highway access of lands located along the frontage of primary arterial highways located within Upper Chichester Township (that is, Routes 322 and 452), in a way that is consistent with the goals and intent of the Comprehensive Plan of Upper Chichester Township. The District seeks accomplish the following specific purposes:

1. To enhance the overall function and appearance of primary arterials, which serves as a "gateway" and principal arterial highway through the community.
2. To minimize hazardous traffic flow conditions and confusion for drivers along primary arterials.
3. To make the transition between the high-speed, free-flowing driving experience of primary arterials and the lower-speed, more restrictive driving conditions encountered on the intersecting roads, access points and driveways as smooth as possible for highway users.
4. To promote the orderly and coordinated development of land along primary arterials, and to avoid the adverse effects that uncoordinated, lot-by-lot development can have on the highway.
5. To provide for safe, understandable and convenient access to abutting uses without causing traffic flow problems.
6. To promote channelized and coordinated accessways along primary arterials, in order to limit conflicting turning movements, traffic congestion and other potential vehicular hazards.

7. To encourage reverse-frontage and other design techniques for proposed development to be located along primary arterials, in order to minimize the need for additional accessways or intersecting roads.
8. To require, as part of the development plan review process, related traffic control improvements (such as acceleration and deceleration lanes, traffic signalization, marginal access roads, service roads, loop roads, jug handles, turning or stacking lanes and similar low-capital intensive improvements) and public transit enhancements (such as bus pullouts and stops) in order to minimize the effects of new development on traffic flow along primary arterials.
9. To provide setbacks for both principal and accessory uses, including signs and off-street parking and loading areas in order to facilitate potential widening or related access improvements to primary arterials, should future traffic volumes warrant such improvements.
10. To require, where feasible, natural features preservation in conjunction with man-made buffering in order to preserve a spacious and scenic visual environment along primary arterials.
11. To combine with other zoning requirements, as an overlay, to place limitations and additional requirements upon the underlying zoning districts, in order to accomplish the specific purposes described in this Article, in furtherance of the general welfare of the residents of the Township and of the users of primary arterials.

1401.02. District Coverage.

The Access Management Overlay District shall cover all parcels that are adjacent to the primary arterials located in Upper Chichester Township (Routes 322 and 452). However, for parcels that are greater than two hundred (200) feet deep, the additional regulations

of the District shall only apply to the area of these adjacent parcels that is within two hundred (200) feet of the primary arterial, so long as the intent of the District is not compromised.

1401.03. Uses Permitted by Right.

Land, buildings or premises shall be used by right only for one or more of the following uses:

1. Any arterial highway and the appurtenant rights-of-way, including the interchange access ramps, service roads and any information or directional signs erected therein.
2. Those portions of existing roads of a lower classification than arterial, as defined in Upper Chichester Township's comprehensive plan, or existing access driveways. Any improvements to these roads or driveways should comply with the requirements of this District, to the maximum extent possible.
3. Any nonstructural use that is permitted by right in the underlying zoning district and that does not contradict the purpose of this District.
4. Any structural use permitted by right in the underlying zoning district, subject to the guidelines in Article 1401.06.

1401.04. Uses Permitted by Special Exception.

The following uses shall be permitted by special exception only, subject to the applicable provisions of Articles 1800 (Conditions and Standards for Special Exceptions) and 2100 (Zoning Hearing Board):

1. Off-street parking areas associated with passenger stop or shelter or related public transportation facilities.
2. Proposed public or private roads or access driveway that are not consistent with Article 1401.06.

3. Parking and loading areas, including above-grade, structured parking facilities.
4. Expansion of a use rendered non-conforming by the adoption of this Article.
5. Those uses permitted by special exception or as conditional uses in the underlying zoning district.

1401.05. Prohibited Uses.

The following uses shall be prohibited:

1. Junkyards, scrapyards or similar outdoor storage uses.
2. Billboards or similar advertising devices or signs that exceed a surface area of one hundred (100) square feet.
3. Flashing signs or other advertising devices of any type or configuration.
4. Subdivisions and land developments that do not comply with the development regulations specified in Article 1401.06.
5. Any use of the same general character as those uses listed above.

1401.06. Guidelines for Subdivisions, Land Developments, and Individual Uses.

For any subdivision, land development or individual uses proposed to be located within the Access Management Overlay District the following guidelines shall apply:

1. Access controls. Direct driveway access to primary arterials or intersecting roads within the Access Management Overlay District from a subdivision, land development or individual use shall not be permitted, unless the following alternative development techniques are demonstrated by the applicant to be infeasible on

other than purely economic grounds. The application of these techniques shall be governed by the requirements of Upper Chichester Township's Subdivision and Land Development Ordinance. The following alternatives are presented according to their priority in meeting the purpose of this District.

- a. Marginal access road, where direct driveway access is to a marginal access road parallel to primary arterials. If possible, this marginal access road should not intersect directly with primary arterials, but should feed into a road that intersects the highway at a signalized intersection. Every effort should be made to minimize the number of intersections from marginal access roads within the Access Management Overlay District.
- b. Reverse-frontage development, where direct driveway access is to a residential or feeder road in the rear of the properties. If possible, this marginal access road should not intersect directly with primary arterials, but should feed into a road that intersects the highway at a signalized intersection. Every effort should be made to minimize the number of intersections from marginal access roads within the Access Management Overlay District.
- c. Joint access, where direct driveway access from a lot or development to primary arterials or an intersecting road within the Access Management Overlay District is provided jointly with other lots or parcels created as part of the same subdivision or land development, or with adjacent lots or parcels not part of the same subdivision of land development. If this approach is to be used, a turnaround area or similar technique shall be provided on the lot.
- d. The minimum spacing between the centerline of new and existing roads along primary arterials or an intersecting road within the Access Management Overlay District shall be no less than six hundred (600) feet. No new accessway to

primary arterials shall be located closer than two hundred (200) feet to the point of intersection of an intersecting road or access driveway.

2. Development guidelines.
 - a. The minimum setback for any proposed use within the Access Management Overlay District shall be fifty (50) feet measured from the ultimate right-of-way line of primary arterials and thirty (30) feet from the ultimate right-of-way line of an intersecting road.
 - b. No sign, except a traffic safety or directional sign, and no parking, loading, or other storage area, shall be located closer than twenty-five (25) feet to the ultimate right-of-way line of primary arterials or other intersecting road located within the Access Management Overlay District.

1401.07. Guidelines for Mitigating Actions within the Access Management Overlay District.

The following mitigating actions shall be incorporated with the site development plan for a use proposed to be located within the Access Management Overlay District in order to minimize visual intrusions, traffic flow disruptions and the number and spacing of curb cuts along primary arterials or intersecting roads. These actions may be separate from or in combination with existing natural features, vegetation or topography on the site in question. However, applicants are encouraged to incorporate existing site features as part of any necessary mitigating actions, wherever such an approach is feasible, in order to retain the natural character of the landscape.

1. Landscaped areas. Landscaping must be provided in new developments along primary arterials according to the provisions of Article 1700.18 (General Landscaping and Plan Requirements). In addition, the applicant may demonstrate, through the submission of pertinent plans, renderings or models, that the

development of the proposed structures, buildings, parking areas or signs will be accomplished in a manner that will be compatible with primary arterials and its surroundings and that will minimize the visual effects on both highway users and the users of the proposed development.

2. Traffic flow and access study. For any non-residential use and for any residential use involving more than ten (10) dwelling units, the applicant shall prepare a traffic flow and access study, unless the Township Engineer or Traffic Consultant, with the concurring opinion of the Pennsylvania Department of Transportation, District 6-0, shall determine that such a study is not warranted based upon the submitted plan and proposed development. The study shall describe and map the present and projected traffic flow patterns both with and without the proposed development, based upon existing and 10-year projected traffic counts from the Pennsylvania Department of Transportation, the Delaware Valley Regional Planning Commission or the applicant's traffic engineer. The applicant should analyze internal circulation, access needs, and nearby intersections as determined by the Township Engineer or Traffic Consultant. Particular attention shall be placed upon the relationships of the proposed accessways to primary arterials or other intersecting roads located within the Access Management Overlay District. The sources for all traffic flow data, turning movements and projections shall be clearly labeled in the submitted study. The study shall include the rationale for the accessways chosen as well as any alternatives rejected by the applicant.
3. Driveway spacing. Access management options are listed in order of preference in Article 1401.06. At the very least, driveways should be spaced a minimum of two hundred (200) feet apart or shared with an adjacent property, unless rigid adherence to this standard is determined to be either impractical or infeasible, upon the written request of their applicant with the concurrence of the Township Engineer or Traffic Consultant.

4. Sight distance. Adequate sight distance shall be provided at every accessway and intersecting road, subject to underlying zoning and existing regulations.
5. Other traffic flow improvements. The applicant is encouraged to submit related traffic flow improvement proposals in conjunction with the traffic flow and access study described above, to mitigate additional internal or external traffic generated by the site. Acceleration and deceleration lanes, traffic signalization, marginal access roads and curbing or stacking lanes are examples of low capital-intensive improvements that would facilitate traffic flow in conjunction with new development. Any such proposed improvements shall be reviewed and approved by the Township Engineer, with the advice of Pennsylvania Department of Transportation District 6-0 staff, except on state maintained roads, where final approval shall be obtained from the Pennsylvania Department of Transportation.

1401.08. Uses or Structures Rendered Non-Conforming by the Adoption of the Access Management Overlay District.

Following the adoption of this Article, any use or structure which is situated within the boundaries of the Access Management Overlay District and which does not conform to the permitted uses specified in Article 1401.03 shall become a non-conforming use or structure, regardless of its conformance with the requirements of the underlying zoning district in which it is located.

1. The expansion or continuance of a non-conforming use or structure which is non-conforming with respect to the other zoning districts in which it is located without consideration of this Article, shall be governed by the requirements of Article 2200 (Nonconforming Uses, Structures, and Lots) of this Ordinance.
2. The expansion or continuance of a non-conforming use or structure that is rendered non-conforming due to the adoption of

this District shall be treated as a special exception, and shall be covered by the process described in Articles 1800 (Conditions and Standards for Special Exceptions) and 2100 (Zoning Hearing Board).

APPENDIX B

STUDY PARTICIPANTS

The following municipal representatives were involved in the development of this study, and their valuable input helped to shape its recommendations.

Concord Township

Mr. John Alexander
Mr. Joe Barbato
Mr. Bob Caldwell, Planning Commission
Mr. Jack Cornell, Township Manager
Mr. Chadd Ingram, Township Engineer
Mr. Robert Mench
Mr. Ron Moore, Pennoni Associates
Mr. Dominic Pileggi, Supervisor

Bethel Township

Mr. John Gallagher, Planning Commission
Mr. Alfred Groer, Planning Commission
Ms. Judy Lizza, Planning Commission
Mr. Robert McLarnan, Planning Commission
Mr. Reece Thomas, Planning Commission

Upper Chichester Township

Ms. Christine Brown
Mr. Joseph DiMarco, Commissioner
Mrs. Laurie Ferro
Mr. Thomas Ferro, Commissioner
Mr. Russell Green

Ms. Anne McGough
Mr. Henry McGough
Mr. Russell Minner, Commissioner
Chief William T. Robinson

In addition to the municipal representatives, the following people were also involved in various aspects of the Route 322 Land Use Strategies Study:

John Laughner, Project Manager
Pennsylvania Department of Transportation, District 6-0

Timothy O'Brien, Project Management Administrator
Pennsylvania Department of Transportation, District 6-0

Robert Keller, Environmental Manager
Pennsylvania Department of Transportation, District 6-0

Mark C. Roth, Branch Manager
Alfred Benesch & Company

Mark Bristol-Evans, Associate
Carter Van Dyke Associates

Mark Keener
Brown & Keener Urban Design

The following individuals from the Delaware County Planning Department offered considerable support throughout the Route 322 Land Use Strategies Study:

Eugene Briggs, Policy Manager
Duane Gibli, Policy Planner
Susan Hauser, Data Services
Thomas Shaffer, Transportation Manager
Kathleen Wandersee, Historic Preservation Planner

In particular, Eugene Briggs contributed considerably to this study. He attended and helped to conduct numerous meetings, reviewed drafts of several stages of the report, and drafted several sections of Appendix A, including most of the recommended comprehensive plan amendments.

In addition, the following DVRPC staff were involved in the preparation of this study:

Richard Bickel, Deputy Director for Regional Planning
Tamar Blau, GIS Analyst
Jeffrey Butler, Regional Planner
Santina DeSipio, GIS Analyst
Patty Elkins, Manager of Environmental Planning
Kim Korejko, GIS Analyst
Glenn McNichol, Senior GIS Analyst
Karin Morris, Regional Planner
Matt Sumpter, Transportation / Regional Planner

Thanks to all these individuals for their help in completing the Route 322 Land Use Strategies Study.

Title of Report: **Route 322 Land Use Study**

Publication No.: **02022**

Date Published: **June 2002**

Geographic Area Covered: Bethel, Concord, and Upper Chichester townships, Delaware County.

Key Words: land use, transportation, access management, transportation and land use linkage, bicycle and pedestrian planning, transit, multi-municipal planning, zoning, implementation.

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ABSTRACT

This report recommends local land use strategies to accompany the Route 322 improvements project proposed by the Pennsylvania Department of Transportation. This study seeks to create consistency between local land use plans and PennDOT's plans for the expansion of the highway, by encouraging access management and the modification of existing land use planning documents.

The Route 322 Land Use Study included an extensive implementation phase that led to the drafting of specific zoning districts and comprehensive plan amendments. These documents are contained in the appendices of this report.

THORNBURY

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Chester
Heights

MIDDLETOWN

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CONCORD

ASTON



Delaware Valley Regional Planning Commission

CHADDS
FORD

322

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BETHEL

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DELAWARE COUNTY, PA
NEW CASTLE COUNTY, DE

UPPER
CHICHESTER

CHESTER

Brookhaven

452

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Chester

Trainer

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LOWER
CHICHESTER

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