# US 202 REGIONAL OVERVIEW STATEMENT

December 1990

Delaware Valley Regional Planning Commission

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Delaware Valley Regional Planning Commission The Bourse Building 21 South 5th Street Philadelphia, PA 19106 This report, prepared by the Transportation Planning Division of the Delaware Valley Regional Planning Commission, was financed by the United States Department of Transportation and the Pennsylvania Department of Transportation. The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agency.

Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency which provides continuing, comprehensive and coordinated planning for the orderly growth and development 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. The Commission is an advisory agency which divides its planning and service functions among the Office of the Executive Director, the Office of Public Affairs, and four line Divisions: Transportation Planning, Regional Information Services Center, Strategic Planning, and Finance and Administration. DVRPC's mission for the 1990s is to emphasize technical assistance and services and to conduct high priority studies for member state and local governments, while determining and meeting the needs of the private sector.



The DVRPC logo is adapted from the official seal of the Commission 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 flowing through it. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey. The logo combines these elements to depict the areas served by DVRPC.

#### DELAWARE VALLEY REGIONAL PLANNING COMMISSION

#### **Publication Abstract**

TITLE

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## Geographic Area Covered:

US 202 corridor—Bucks, Montgomery, Chester and Delaware counties.

### **Key Words:**

Highways, environmental impact, US route, plans, proposals, traffic projections, right-of-way.

#### **ABSTRACT**

Examines existing land use, demographic, transportation, and development conditions in the US Route 202 Corridor in the DVRPC region. Forecasts future demographic conditions, lists developments underway or proposed. Reviews regional policy statements and development strategies to synthesize a development strategy for Route 202 which is consistent with regional goals.

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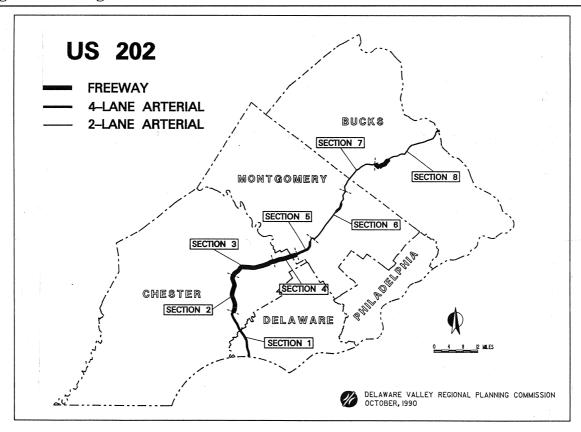
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#### **EXECUTIVE SUMMARY**

The purpose of this study is to demonstrate the importance of Route 202 in a regional context, and to show how improvements to this corridor are consistent with regional planning policies. It is intended to supplement future Environmental Impact Statement work along the 202 corridor, and contains present and forecasted future demographic, land use, transportation, travel characteristics data for municipalities located along Route 202. The highway corridor is divided into eight sections (Figure I) as follows:

Section 1:	Delaware state line to Matlack Street
Section 2:	Matlack Street to Route 30 interchange
Section 3:	Route 30 interchange to Route 252 Paoli interchange
Section 4:	Route 252 Paoli interchange to I-76 interchange
Section 5:	I-76 interchange to Johnson Highway
Section 6:	Johnson Highway to Route 309 intersection
Section 7:	Route 309 intersection to Doylestown Bypass entrance
Section 8:	Doylestown Bypass entrance to New Jersey state line

Figure I: The eight sections of US Route 202



Route 202 stretches from Wilmington, Delaware to Bangor, Maine, and covers 627 miles. In the DVRPC region, Route 202 covers 61 miles, or about 10% of the total mileage. It traverses 27 municipalities.

The route known today as Route 202 was on the original US Route system designated in 1926. At that time, it was known as Route 122, and connected Route 22 in Whitehouse, New Jersey, to Wilmington, Delaware. It was extended and renamed Route 202 in 1935. Most of the roads which make up the current Route 202 were built before the turn of the century.

Growth along the Route 202 corridor began in earnest after World War II. The 1951 completion of the Schuylkill Expressway, with its Pennsylvania Turnpike interchange, made the King of Prussia area accessible from Center City and points west. Route 202 provided access from communities to the north and the south. Accessibility brought jobs, housing, shopping, and traffic congestion to King of Prussia. Development soon spread to most of the Route 202 municipalities.

With the exception of the freeway sections built to bypass West Chester and Paoli, Doylestown, and New Hope, no new routes were constructed to alleviate the congestion which has grown on all sections. Thus, each of the eight segments carries a substantial amount of daily through trips as well as local trips. Congestion is severe on many sections during the peak hours, and current Average Annual Daily Traffic volumes (Figure II) in most places are beyond the design capacity of the roadway.

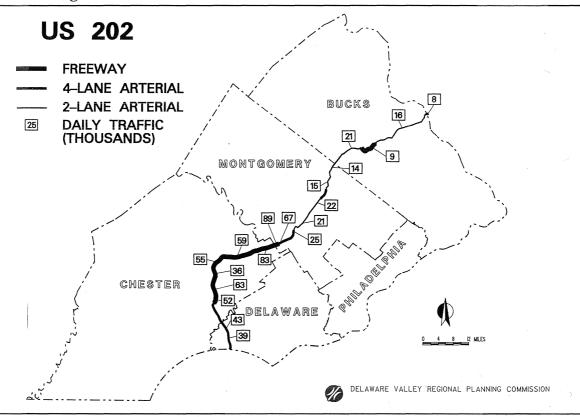
Among the sections of Route 202, each is unique in terms of both physical conditions and land use. Section 1 is a 4-lane 45-mph roadway with 11 signalized intersections. Land use is predominantly a mixture of commercial/retail and residential, with some agricultural and recreational parcels. Most parcels have direct driveway access to the roadway. Sections 2, 3, and 4 are 4-lane, 55-mph, limited access sections. Land use along these sections is mostly office campus or undeveloped, with some residential tracts. None of these parcels has direct access to this highway section.

Section 5 is a 4-lane, 45 mph roadway through the heart of King of Prussia, Bridgeport and Norristown Boroughs. There is a concrete median strip throughout most of the portion in King of Prussia, with channelized left turn lanes at each of the eight signalized intersections. Land use is predominantly commercial, and includes two major regional shopping malls. North of Henderson Road, Route 202 is a 4-lane 45-mph roadway which splits into northbound and southbound roads at the boundary between Upper Merion Township and Bridgeport Borough.

North of the split, Northbound Route 202 is a 2-lane 25-35 mph roadway through the central business districts of Bridgeport and Norristown Boroughs. Land use here is residential and commercial. Southbound Route 202 has similar land use characteristics in Norristown, but is also a 4-lane 45-mph highway between Main Street in Norristown and the point where it rejoins northbound 202.

North of Norristown, Section 6 is a 2-lane 40-mph arterial until a point just north of Morris Road, where there is a 4-lane, 55-mph section to south of Sumneytown Pike. Between Sumneytown Pike and Route 309, the roadway returns to two lanes with a 45 mph speed limit. Land use is primarily suburban residential with some shopping and undeveloped parcels.

Figure II: Average annual traffic on US 202



The southern portion of Section 7, which Route 202 shares with PA Route 309 is a 4 lane 45 mph roadway with numerous signals. Land use is entirely commercial, including one major regional shopping mall. North of Route 309, land use is the same type of suburban residential and commercial found in the northern segment of Section 6. Section 8 is a 2 lane 45 mph roadway. Land use here is the least intensive on any of the sections, mostly rural residential with a small amount of commercial development and a significant amount of agricultural land.

Overall, the population of Route 202 municipalities is forecasted to grow almost 21% between 1990 and the year 2010, and employment is forecasted to grow almost 15%. 19 roadway projects are planned in the next 12 years for Route 202, and 109 parcels are in the process of being developed.

As more jobs become available in the suburbs, commuting patterns are increasingly suburb-tosuburb. As a circumferential highway, an efficient Route 202 is key in maintaining suburban mobility in this region, and is therefore the focus of a number of local planning initiatives. Given the regional importance of the roadway, a strategy for the future of Route 202 is presented to coordinate and focus these initiatives. When carried out, this strategy will insure that Route 202 will continue to serve the needs of its host communities and users as a modern, 21st Century highway.

#### 1 INTRODUCTION

#### **Purpose**

The US 202 Regional Overview Statement serves two purposes. First, it demonstrates the importance of US 202 in the context of recent and proposed development and shows that improvements are needed on US 202 in order serve this growth. Secondly, the Statement references relevant plans and policies from the region and counties and suggest which improvements will be consistent with these documents. The Supplement to the Statement focuses on the portion of the corridor between Bridgeport and Doylestown which is the subject of the environmental impact statements (EIS's) to be written in 1991. The Supplement demonstrates that giving priority to addressing problems in these sections is consistent with the overall strategy for the corridor.

This report supplements the EIS's but does not replace the need for the EIS consultants to address the issues revealed through the public participation process and local traffic needs such as those at intersections.

Plans, programs and policy statements which affect the corridor from municipal, county and regional sources have been reviewed. Demographic and land use information and projections were also assembled and are presented in the Statement. Documents used in the preparation of the Statement are listed in Appendix III.

Corridor and roadway travel characteristics are described, as well as traffic data. Additional counts have been made as necessary to prepare a complete and accurate picture of existing traffic. Increases in this traffic for a future year have been forecasted. Regional perspectives on air quality, land use and linkages to other modes are also discussed.

#### **Organization**

The report is divided into sections which correspond to parts of US 202 which function differently, or which are anchored by important destinations. The sections are described below and shown on the series of maps in Section II of the report:

- 1 Delaware state line to Matlack Street
  - a four-lane arterial highway in a developing suburban area
- 2 Matlack Street to US 30
  - a four-lane freeway bypass of West Chester

#### 3 US 30 to PA 252 (Paoli)—

a four-lane freeway in a developing suburban area

#### 4 US 252 (Paoli) to I-76 (Schuylkill Expressway)—

a four-lane freeway in a congested, developed area

#### 5 I-76 (Schuylkill Expressway) to Johnson Highway—

a four-lane arterial in a congested commercial area, a two-lane arterial and one-way pair traverseing Bridgeport and Norristown Boroughs

#### 6 Johnson Highway to PA 309—

a primarily two-lane arterial in suburban areas experiencing a large amount of growth

#### 7 PA 309 to PA 611—

a four-lane arterial in heavily commercial area (shared with PA 309), plus a primarily two-lane arterial in a developing area and older boroughs

#### 8 PA 611 to New Jersey state line—

a four-lane freeway and a two-lane arterial area in developing suburban area

#### Coordination

Preparation of the Statement has been coordinated with an informal working group of regional and local planners representing the area through which US 202 passes. DVRPC met with members of the group as required to develop local inputs to the needs analysis as well as historical information and other relevant issues related to the projects.

In July of 1989, Howard Yerusalim, P.E., Pennsylvania Secretary of Transportation directed that an Executive Committee be formed to oversee and expedite the development of plans for US 202. The Committee consists of representatives from PennDOT, the Federal Highway Administration, Delaware Valley Regional Planning Commission, and the counties of Delaware, Chester, Montgomery, and Bucks. The purpose of the Committee is to provide overall policy direction, coordination among the involved agencies and expeditious decisions on questions of funding and implementation.

#### 2 HISTORY OF THE CORRIDOR

#### Background

Route 202 is important at both regional and national levels. As a national highway, it begins in Wilmington, Delaware and continues a total of 627 miles through Delaware, Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, and New Hampshire before terminating in Maine just outside of Bangor. In Pennsylvania, Route 202 is just under 61 miles long, or about 10% of the total U.S. mileage.

The Pennsylvania portion of Route 202 is wholly within the Delaware Valley Regional Planning Commission (DVRPC) area, traversing Delaware, Chester, Montgomery, and Bucks counties (Figure 1). The mileage breakdown per county is as follows:

County	Mileage
Delaware	4.7
Chester	20.9
Montgomery	17.2
Bucks	18.0

Source: Pennsylvania Department of Transportation

Throughout the DVRPC region Route 202 is found in 27 municipalities. It is known locally by many names, as indicated in Table 1.

Although the roads which make up Route 202 were built well before the turn of the century to connect established settlements, their importance as links between communities has not diminished. Development along this corridor has followed the typical scenario of locating on major access routes. Unlike some other US routes in this region, only a few of the originally designated roadways have been replaced by new highways. Only 25.4 miles of Route 202 (41%, mostly in Chester County) are on limited access high speed roadways. Thus, Route 202 remains the main road through most of the communities it serves.

These communities have experienced significant development and traffic growth in the past few decades, but aside from the freeway sections little additional capacity has been built into the roads which make up Route 202. Whereas once it was considered a rural highway, it is now one of the most densely developed and heavily congested corridors in the region.

Figure III US ROUTE 202 IN THE DVRPC REGION

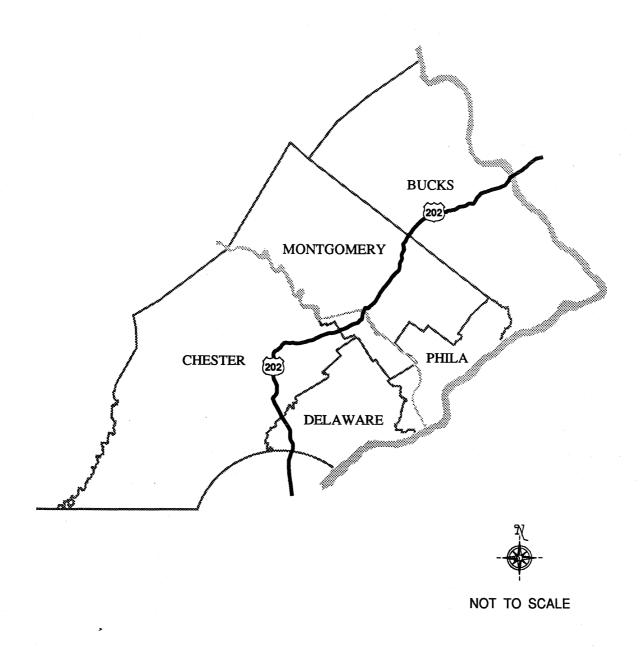




Table I LOCAL ROAD NAMES

County	Municipality	Road Names
Delaware	Concord Township	Wilmington-West Chester Pike
	Birmingham Township	Wilmington-West Chester Pike
	Thornbury Township	Wilmington-West Chester Pike
Chester	Birmingham Township	Wilmington-West Chester Pike
	Thornbury Township	Wilmington-West Chester Pike
	Westtown Township	Wilmington-West Chester Pike
	West Goshen Township	West Chester Bypass/Highway 202
	East Goshen Township	Highway 202
	West Whiteland Township	Highway 202
	East Whiteland Township	Highway 202
	Tredyffrin Township	Highway 202
Montgomery	Upper Merion Township	Highway 202/De Kalb Pike
	Bridgeport Borough	De Kalb Street (NB 202)
	Norristown Borough	De Kalb Street (NB 202)
		Markley Street (SB 202)
	East Norriton Township	De Kalb Pike
		Johnson Highway (SB 202)
	Whitpain Township	De Kalb Pike
	Lower Gwynedd Township	De Kalb Pike
	Upper Gwynedd Township	De Kalb Pike
	Montgomery Township	De Kalb Pike
		Bethlehem Pike (Route 309) Doylestown Road
Bucks	New Britain Township	Doylestown Road/Butler Avenue
Ducks	Chalfont Borough	Butler Avenue
	New Britain Borough	Butler Avenue
	Doylestown Township	Butler Avenue/Route 202 Bypass
	Doylestown Township  Doylestown Borough	West State Street/East State Street
	Buckingham Township	East State Street
	Duomingiam 10 minip	York Road
		Lower York Road
	Solebury Township	Lower York Road
	bottowij zowiomp	New Hope Bypass
	New Hope Borough	New Hope Bypass

#### **US Route Numbering System**

The United States route numbering system was implemented in 1926 in order to create a system of roadways for orderly long-distance interstate travel. Prior to this, interstate travel routes, sometimes called "trails", were marked by organizations with a financial interest in their promotion. Groups such as the Lincoln Highway Association maintained the markings on their respective trails and promoted them as routes for the interstate traveler. These groups were competitive and never coordinated activities - in many cases, these "trails" shared the same roadways for several miles at a time, and were generally confusing to the motoring public.

The movement to adopt orderly interstate travel routes grew out of this disorganization. Competing trail associations' pressure on their local highway departments for improvements to their roads made reasonable programming almost impossible. In response to this, the American Association of State Highway Officials (AASHO) petitioned the Secretary of Agriculture to appoint and oversee a committee whose responsibility would be to develop a marking system for the principal highways of the nation.

The committee, made up of representatives from state departments of transportation, limited roads chosen to Federal-aid highways, which were the only roads under the jurisdiction of the Secretary of Agriculture. No public hearings were held in order to prevent influence of the trail associations. The marking system they developed was simple to understand: one- or two-digit odd numbered roads would run north/south, with numbering beginning on the east coast, while one- or two-digit even numbered roads would run east/west, with numbering beginning in the north. Three digit numbering was assigned to roads considered to be branches of major two digit numbered roads. Traffic warning signs and route markers were also standardized nationwide at this time.

The route designated as Route 202 in this region was part of the original system of numbered routes proposed by AASHO in 1926 and adopted in 1927. At that time, it was designated Route 122, and ran between Route 22 in Whitehouse, NJ (north of Flemington) and Wilmington, DE. This route allowed interstate travelers to bypass Philadelphia and Trenton. The section of this route from Whitehouse to Route 2 Bangor, ME was added to the US numbered route system in 1935. This expanded route was numbered 202 to reflect its status as a spur of Route 2.

#### Local roads comprising US 202

Many of the roads which make up today's Route 202 in the DVRPC region are original to the 1927 Route 122, and are the same roads built in the 17th and 18th centuries as main roads between the established settlements west of the City of Philadelphia. Early maps of the region show that Swedesford Road and the roads from Wilmington to West Chester, from Norristown to Montgomeryville, and from Montgomeryville to New Hope were already in place by 1800.

The remaining roads along the original alignment of Route 202: Paoli Pike, Bearhill Road, and De Kalb Pike, were built in the 19th century. West Chester, Norristown, and Doylestown (all county seats) grew and prospered during the late 19th and early 20th centuries, while land use along the route connecting them remained agricultural.

#### **Development of the corridor**

Although it was officially designated a US Route in 1927, it was not until after World War II that development in the rural areas along the Route 202 corridor increased. Suburban growth along Route 202 began in earnest in the late 1940's and early 1950's. The 1951 completion of the Schuylkill Expressway and its interchange with the Pennsylvania Turnpike at Valley Forge made the King of Prussia area easily accessible from Center City. Access to the Turnpike made for easier long distance travel and goods movement. Route 202 provided access from areas to the north and south of this interchange. Accessibility attracted both jobs and housing.

In 1962, General Electric became a major King of Prussia employer. Their original Valley Forge facility, built to supplement their facility in Philadelphia, brought more than 3000 new jobs to the area. Numerous other employers were also attracted to this accessible area. As auto ownership grew during the 50's and 60's, the increasingly mobile suburban population became more geographically diverse. Route 202 remained the most convenient route to access the King of Prussia area throughout this time, and traffic volumes grew substantially.

By the late 1960's traffic congestion along Bearhill Road, Paoli Pike, and Swedesford Road clearly demonstrated the need for another road into King of Prussia from the West Chester area. In 1967, a new Route 202 alignment was designated between Wilmington Pike south of West Chester and South Gulph Road in King of Prussia. This road was designed as a 4-lane high-speed highway to bypass West Chester and remove through traffic from existing Route 202. It was opened to traffic in 1965 and officially designated as US 202 in 1967.

During the late 1960's and early 1970's, new employment, residential, and commercial centers began to develop along the Route 202 corridor in Delaware, Montgomery, and Bucks Counties. Traffic congestion on Route 202 in the central business districts of Norristown, Doylestown, and New Hope Borough increased significantly, necessitating additional bypasses.

The Doylestown Bypass was completed in 1972, and allows traffic on Route 611, as well as on Route 202, to travel on a high-speed road to bypass central Doylestown Borough. As an alternative to a high-speed bypass road around Norristown, the Dannehower Bridge across the Schuylkill River between Norristown and Upper Merion Township was constructed in conjunction with the 1974 re-designation of Route 202 through the Boroughs if Norristown and Bridgeport to roads with higher capacities. The New Hope Bypass, including a new bridge over

the Delaware River, was also constructed in 1972 to alleviate truck traffic through the quaint borough of New Hope.

Although high interest rates and the energy crisis slowed the pace of new development during the 1970's, Route 202 remained the only convenient access route between existing suburban communities, and traffic volumes continued to grow. Employers seeking to move out of urbanized areas continued to be attracted to Route 202 locations as alternatives to less accessible sites. As interest rates began to fall in the early 1980's, the pace of both housing and commercial development quickened. Major employment centers such as Painter's Crossroads (intersection of US 202 and US 1) in Delaware County, and Chesterbrook, in Tredyffrin Township, Chester County, attracted significant additional traffic to the 202 corridor.

The 1980's also saw a rapid increase in the amount of housing constructed along Route 202 in the Montgomery County communities north of Whitpain Township, in Bucks County areas south of Doylestown, and in Chester County north of West Chester Borough. Home prices along the 202 corridor in central Montgomery County and in Bucks County began to attract a large number of commuters traveling to employment centers along New Jersey's Route 202 corridor and in metropolitan New York, which resulted in increased traffic on the northernmost segments of the route. As the region enters the 1990's, congestion along all segments Route 202 continues to increase.

While the Interstate system has effectively removed the long-distance traveler from Route 202, it continues to be the only arterial to serve the major employment, residential and commercial/retail centers which were attracted by convenient access. With the exception of those original roads which were subsequently bypassed, there are few parallel roadways of any significant mileage. Route 202, therefore, functions throughout its length as both a primary arterial for commuter and truck traffic, and a local road, carrying trips to nearby workplaces, shopping centers, and other community destinations. The decades of fast-paced economic growth in Route 202 corridor areas have only enhanced its importance as a regional route.

#### 3 DESCRIPTION OF THE EXISTING CORRIDOR

#### Section 1: Delaware State Line to Matlack Street

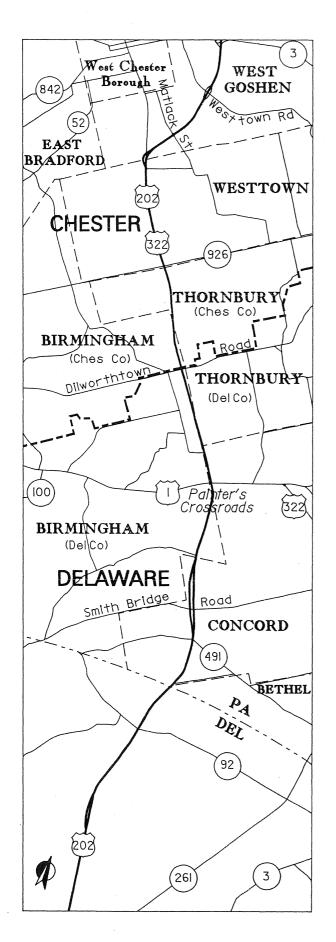
Section 1, the segment of Route 202 between the Delaware state line and the southern terminus of the West Chester Bypass, is 7.8 miles long. It has 4 lanes and 11 signalized intersections. In this section, Route 202 is important as both a local road and a regional highway. Between US 1 and the beginning of the Bypass, US 202 is also US 322. Commercial development attracts trips from surrounding communities, and it is also the most efficient route for traffic oriented toward employment centers along Route 202 at Painters Crossroads (at the intersection with US 1), in Chester and Montgomery Counties, and in New Castle County, Delaware.

Section 1 of Route 202 traverses three municipalities in Delaware County: Concord Township, Birmingham Township, and Thornbury Township, and four municipalities in Chester County: Birmingham Township, Thornbury Township, Westtown Township, and West Goshen Township (Figure IV). The total population of these townships in 1980 was 23,444, which grew 30.6% by 1990 to 30,619. Population in Delaware County as a whole actually decreased by 1.3% in the same time period, from 555,023 in 1980 to 547,651 in 1990, while Chester County grew 18.9% between 1980 to 1990, from 316,660 to 376,396.

Between 1980 and 1987, employment in the municipalities along this section grew more than 33%, from 8,178 to 10,926. During this time, almost 1100 jobs, or one-half of the total employment growth in Section 1 municipalities, occurred in Concord Township. Table II lists population and employment growth for the Section 1 municipalities, as well as countywide growth rates.

Traffic volumes along Section 1 increased significantly between 1981 and 1988. Average annual daily traffic (AADT) grew an average of 4% per year in that time. 1988 DVRPC traffic counts show current traffic volumes are higher in the northernmost part of Section 1, with about 14% truck traffic. According to Delaware and Chester County planners, level of service north of the US 202/US 1 intersection is around C/D and sometimes D/E during the morning and evening peak hours, while south of this intersection LOS is B/C during the same time periods. Because of the large number of turning movements at this intersection, peak hour LOS is generally E/F; during off-peak hours, it improves to D or C/D.

Currently, transit service is unavailable along Section 1. There are, however, two initiatives presented by SEPTA for new bus service along this corridor. The proposed Route 119 would originate in the City of Chester and travel on Section 1 between Route 1 and the southern terminus of the West Chester Bypass. Also, an express route between Wilmington



Northern limit of Section 1 Matlack Street

■ 1981 AADT 39,400
 1988 AADT 55,600 (+5.0%/year)
 North of PA 926

✓ 1981 AADT 34,000
 1988 AADT 43,500 (+3.6%/year)
 South of PA 926

 ■ 1981 AADT
 35,000

 1988 AADT
 46,700
 (+4.2%/year)

 North of US 1

■ 1988 AADT 38,700
 South of US 1

■ 1988 AADT 35,400 North of Delaware state line

Southern limit of Section 1
 Delaware state line

#### Figure IV US ROUTE 202 SECTION 1 AVERAGE DAILY TRAFFIC

Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

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and West Chester has been proposed. Both of these routes are in the planning stages, and starting dates have not yet been determined.

Table II: SECTION 1 POPULATION AND EMPLOYMENT

	Population		Employment			
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change
Concord Township	6437	6933	7.7%	2941	4070	38.4%
Birmingham Township (Delaware)	2057	3118	51.62%	1012	1278	26.3%
Thornbury Township (Delaware)	3653	5056	38.4%	1414	1741	23.1%
Birmingham Township (Chester)	1584	2636	66.41%	1084	1078	-0.6%
Thornbury Township (Chester)	1323	1131	-14.5%	43	159	269.8%
Westtown Township	6774	9937	46.7%	975	1310	34.4%
10% of West Goshen Township	1616	1808	11.9%	709	1290	82.0%
Section Total	23444	30619	30.6%	8178	10926	33.6%
Delaware County	555023	547651	-1.3%	241314	229038	-5.1%
Chester County	316660	376396	18.9%	145106	169149	16.6%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

Section 1 land use is comprised mostly of numerous small commercial operations, residential developments in small or medium-sized tracts, and agricultural or open space. There is also a major employment center at Painters Crossroads. In general, the smaller businesses fronting Route 202 south of Painters Crossroads have direct driveway access, while residential developments access Route 202 via local or collector roads. Speed limit in this section is posted at 45 mph. North of this intersection, there are fewer driveways and access points, posted speed is 55 mph, and there is a concrete median strip. AADT is higher in this portion due to US 322 traffic also using this section of the highway. Painters Crossroads parcels have access on an (as yet) uncompleted ring-road system, which intersects Route 202 at signalized intersections.

The Painters Crossroads area is not only one of the region's emerging major employment centers, but also the intersection of two of the region's major arterial routes. More than 52,000 vehicles travel through this intersection during a typical weekday. In addition, approximately 1700 employees work in this area, which includes two expanding business parks and a major insurance company's claim center. Virtually all of these employees commute to their jobs by automobile. Consequently, this intersection is one of the most congested in the region.

Congestion along this section is further exacerbated by the number of access points to commercial parcels along the one-way couplet in Concord Township, and the concentrated commercial development in Birmingham Township, Delaware County. Between Concord Township and Painters' Crossroads, land use is almost entirely commercial. This combination of numerous signals, unregulated access points, high through-traffic volumes, and a large employment base with no available public transportation results in significant congestion along Section 1.

#### Sections 2, 3, and 4: Matlack Street to The Schuylkill Expressway (I-76)

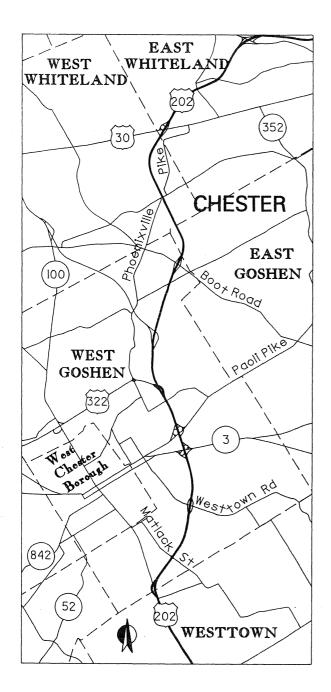
Along Sections 2, 3, and 4, between West Chester Borough and King of Prussia, Route 202 is a 4-lane, 55-mph limited access highway. The combined sections are about 17 miles long, with one signalized intersection and 14 grade-separated interchanges. Three of these interchanges have been constructed within the last five years: one serves the "Great Valley" employment center in East Whiteland and Tredyffrin Townships; the other two serve the "Chesterbrook" area of Tredyffrin Township. Land use immediately adjacent to the road in all of these sections is primarily open space or office campus developments, with some residential development. None of these parcels has direct access to Route 202.

Section 2 is entirely within Chester County, beginning at the southern terminus of the West Chester Bypass and ending at the interchange with US Route 30. It lies within West Goshen Township, East Goshen Township, and West Whiteland Township, and is 5.4 miles long (Figure V). Between 1980 and 1990, population in Section 2 municipalities grew from 34,150 to 43,815 (28.3%). Employment grew during this time period at a much faster pace than population. Between 1980 and 1987, employment in the same municipalities grew almost 74% from 10,856 to 18,871 (Table III).

Table III: SECTION 2 POPULATION AND EMPLOYMENT

	Population			Employment		
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change
90% of West Goshen Township	14548	16274	11.9%	6378	11610	82.0%
East Goshen Township	10021	15138	51.1%	780	1052	34.9%
West Whiteland Township	9581	12403	28.3%	3698	6209	67.9%
Section Total	34150	43815	28.3%	10856	18871	73.8%
Chester County	316660	376396	18.9%	145106	169149	16.6%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988



■ Northern limit of Section 2 US Route 30

■ 1981 AADT 25,500
 1988 AADT 41,000 (+7.0%/year)
 South of US 30

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#### Figure V US ROUTE 202 SECTION 2 AVERAGE DAILY TRAFFIC

AVERAGE DAILY TRAFFIC
Scale: One inch equals approximately 1.4 miles

Delaware Valley Regional Planning Commission

◀	1981 AADT 1988 AADT South of Boot Road	23,500 36,000	(+6.3%/year)
<b>◄</b>	1981 AADT 1988 AADT North of US 322	34,000 59,000	(+8.2%/year)
4	1981 AADT 1988 AADT North of PA 3	42,000 63,500	(+6.1%/year)
•	1981 AADT 1988 AADT South of PA 3	36,500 52,000	(+5.2%/year)

■ Southern limit of Section 2

Matlack Street

Some of the heaviest traffic volume growth along Route 202 between 1980 and 1988 occurred along section 2, where volumes increased in certain areas more than 8% per year. Truck traffic comprises about 14% of total traffic. Level of service on this section is generally C or C/D during the peak hours.

In addition to carrying regional through-traffic oriented toward employment and retail centers to the north and south of this section, there are significant numbers of vehicles bound for the West Chester area employers. There are eight grade-separated interchanges and one signalized intersection (at Matlack Street) along Section 2.

In the vicinity of Route 202, SEPTA offers bus service from Elwyn, in Delaware County, to West Chester, which crosses Route 202 at Matlack Street. This route operates in place of the R-3 Regional Rail train service between Elwyn and West Chester (discontinued in 1986) and is called the R-3 shuttle. There are two other bus routes which serve the Borough of West Chester and operate in the vicinity of Route 202 Section 2: The Route 92, which originates in King of Prussia and crosses Route 202 at King Road, and the Route 104, which originates at SEPTA's 69th Street Terminal and crosses Route 202 on PA Route 3 (West Chester Pike).

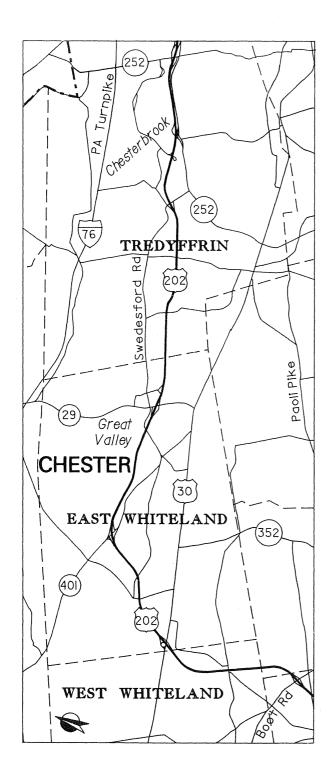
Section 3, which is 8.9 miles long, passes through East Whiteland Township and part of Tredyffrin Township between the Route 30 interchange and the Route 252 Paoli interchange (Figure VI). Population in these municipalities grew more than 12%, from 19,978 to 22,412 between 1980 and 1990. Employment grew almost 78% during the same time period, from 13,362 to 23,704 (Table IV). This growth reflects the expansion of the major employment centers at Great Valley and at Chesterbrook.

Table IV: SECTION 3 POPULATION AND EMPLOYMENT

		Population			Employment		
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change	
East Whiteland Township 50% of Tredyffrin Township	8468 11510	8398 14014	-0.8% 21.8%	9187 4175	17000 6704	85.0% 60.6%	
Section Total	19978	22412	12.2%	13362	23704	77.4%	
Chester County	316660	376396	18.9%	145106	169149	16.6%	

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

Traffic along section 3, where AADT volumes are well over 50,000, increased an average of only 3% per year between 1981 and 1988. This was the slowest growth rate among all



Northern limit of Section 3 PA Route 252 (Paoli exit)

■ 1981 AADT 57,000
 1988 AADT 64,500 (+1.8%/year)
 South of PA 252 (Paoli)

#### Figure VI US ROUTE 202 SECTION 3 AVERAGE DAILY TRAFFIC

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Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

■ 1981 AADT 51,000
 1988 AADT 56,500 (+1.5%/year)
 North of PA 29

4 1981 AADT 48,000
 1988 AADT 58,500 (+2.9%/year)
 South of PA 29

■ 1981 AADT 38,000
 ■ 1988 AADT 54,500 (+5.0%/year)
 North of US 30

■ Southern limit of Section 3
US Route 30

the sections, other where AADTs increased at significantly higher rates. Currently, trucks make up about 9% of the total traffic along this section.

SEPTA operates the Route 206 shuttle bus from the Paoli station of the R-5 Regional Rail line to the Great Valley employment center. This bus runs on Route 29, and crosses Route 202 shortly before entering the employment centers. Ridership on this bus route is light. Two bus routes serve Chesterbrook: the Route 124, which originates in Center City, and the Route 92, which originates in King of Prussia (see reference in Section 2 discussion).In addition, the Route 95 bus serves the West Swedesford Road corridor in the vicinity of Route 202.

The employment center at Great Valley actually consists of three separate sections. The original section is located on Route 29 about 1 mile north of Route 202. The newest section is located along Valley Stream Parkway, which intersects Route 29 and also has an interchange with Route 202. The third section occupies the site of the former Main Line Industrial Park on Lee Boulevard, just west of the original Great Valley section. Combined, about 10,000 people work at these employment centers, and limited transit service obligates most to drive to work.

The Valley Stream Parkway interchange was constructed through a public-private partnership between the developer, the municipalities, and PennDOT, with the intention of relieving the traffic burden on Route 29 and the Route 29/Route 202 interchange. Nevertheless, the great volumes attracted by this employment center cause severe congestion during both the morning and evening peak hours. Peak hour level of service in the environs of the Great Valley area interchanges is usually Level D or worse.

The 2.6 mile stretch of Section 4, between the PA Route 252 interchange and the I-76 (Schuylkill Expressway) interchange, crosses the remainder of Tredyffrin Township and part of Upper Merion Township in Montgomery County (Figure VII). Population in these municipalities grew at a modest rate (14.5%, from 16,737 to 19,158) between 1980 and 1990. Employment in the Section 4 municipalities grew more than 53% during the period from 1980 to 1987, from 10,760 to 16,494 (Table V), and reflects the expansion of the Chesterbrook planned-development area. During this same time, total Chester County employment grew 16.6%.

Section 4 has the highest traffic volumes of any section of Route 202. Between 1980 and 1987, AADT volumes grew by almost 4% per year, and more than 90,000 daily vehicles are currently estimated on the segment between the US 422 and I-76 interchanges. These high volumes are supplied in part by Route 422, which carries traffic from both northern Chester County and western Montgomery County, and I-76, which carries traffic from the PA Turnpike Valley Forge interchange and from Center City, as well as from the northern and southern sections of Route 202 itself. Severe peak hour congestion is normal along Section

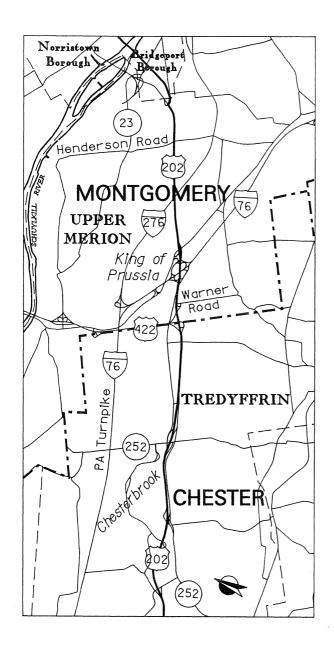


Figure VII US ROUTE 202 SECTION 4 AVERAGE DAILY TRAFFIC Page 21

Scale: One inch equals approximately 1.4 miles
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Northern limit of Section 4 I-76 (Schuylkill Expressway)

◆ 1981 AADT

1988 AADT

64,000

81,500

(+3.5%/year)

Between I-76 and US 422

■ 1987 AADT

82,500

South of US 422

■ 1987 AADT 80,500 Between PA 252 North and PA 252 South

■ Southern limit of Section 4
PA Route 252 (Paoli exit)

4, and the segment between US 422 and I-76 is one of the most congested highway segments in the region.

Table V: SECTION 4 POPULATION AND EMPLOYMENT

	Population			Employment		
Municipality	Official	Official	Percent	Official	DVRPC	Percent
	1980(1)	1990(1)	Change	1980(1)	1987(2)	Change
50% of Tredyffrin Township	11510	14014	21.8%	4175	6704	60.6%
20% of Upper Merion Township	5228	5144	-1.6%	6585	9790	48.7%
Section Total	16737	19158	14.5%	10760	16494	53.3%
Chester County Montgomery County	316660	376396	18.9%	145106	169149	16.6%
	643377	678111	5.4%	304311	461863	51.8%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

Two bus routes operate along Swedesford Road/Devon Park Drive and parallel Route 202 between Warner Road and Valley Forge Road (PA Route 252): Route 124, which originates in Center City and Route 92, which originates in King of Prussia. In addition to the Swedesford corridor sites, both of these busses serve the employers in the Chesterbrook development. SEPTA's bus route 95, which offers service between Plymouth Meeting and Paoli, operates on roadways parallel to Route 202 for the length of Section 4 and serves the employers located along the Swedesford Road corridor.

There are two proposals to modify transit service along this corridor. One of the plans calls for the Route 95 to be merged with Route 118, which currently serves the Chester to Newtown Square corridor. The proposal is for the 118 to extend from its current terminus to the King of Prussia Plaza shopping mall in King of Prussia, taking over the route formerly served by the 95. At the same time, the 95 will terminate its run at the Plaza. The other proposal is for the Route 98 (currently serving the route between Norristown and Oaks) to extend its run to Phoenixville and all three Great Valley employment sites.

Public transportation to Chesterbrook was started in 1989 as part of a SEPTA initiative to provide expanded bus service for employees in the King of Prussia area. An agreement was struck between SEPTA and the employers who requested this service whereby any funding shortfall would be subsidized by those employers. Thus far, this new service is successful and is expected to continue.

#### Section 5: King of Prussia, Bridgeport, and Norristown

Section 5 traverses the King of Prussia area of Upper Merion Township, Bridgeport Borough, and Norristown Borough between the I-76 interchange and Johnson Highway (Figure VIII), and is just under 6 miles long. In King of Prussia, land use is predominantly commercial, but differs from the commercial development along Section 1 in that individual businesses generally do not have direct access to Route 202.

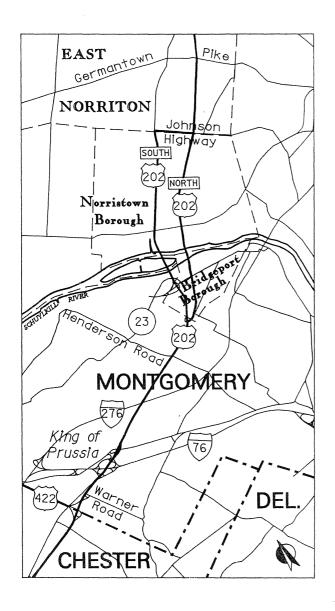
The major regional mall shopping complex has signalized driveways. The concrete median strip, present throughout the length of the King of Prussia portion, controls left turns out of strip shopping centers and residential areas. Most of the roadway is four lanes, with a posted speed of 40 or 45 mph. There are eight signalized intersections along this two mile portion, with left turn storage lanes on Route 202 approaches.

Just east of the Upper Merion Township/ Bridgeport Borough boundary, Route 202 splits into a "one-way" couplet, although two-way traffic is permitted on both roadways with the exception of a small portion of northbound Route 202 in Norristown Borough. Northbound Route 202 travels on DeKalb Street through Bridgeport and Norristown, and is 2.7 miles long, with posted speeds varying between 25-35 mph. Within Norristown, the one-way portion extends fromMain Street to Johnson Highway.

Southbound Route 202 in this couplet is on two roads: Johnson Highway, the 2-lane east/west commercial street which forms the northern boundary of Norristown Borough, and Markley Street, the 25 mph two-way, two-lane predominantly residential street which parallels northbound Route 202. South of Main Street in Norristown, Southbound 202 is a high-speed limited access highway, crossing the Schuylkill River on the Dannehower Bridge and terminating at De Kalb Pike (SR 202) in Upper Merion Township east of Bridgeport. This portion is three miles long. There are ten northbound signalized intersections, and eight southbound signalized intersections along the single-direction segments of Section 5.

Land use in the densely developed boroughs of Bridgeport and Norristown is commercial and residential, and many of the structures were constructed in the early part of the century. In both boroughs, northbound Route 202 travels through their respective central business districts. As a result, the road functions as both a through route and a "main" street.

Population in the portion of Upper Merion Township along Section 5 declined 1.6% between 1980 and 1990. In contrast, almost 13,000 jobs came into this portion of the township during that time period, expanding employment population by more than 48% (Table VI). According to the US Census Bureau preliminary statistics, the number of persons employed in the whole of Upper Merion in 1990 is almost double the number of residents. The population of Norristown and Bridgeport both declined 11.3%



■ Northern limit of Section 5

Johnson Highway

1988 AADT 9700
 NB Only: South of Johnson Highway on NB US 202

◆ 1988 AADT 22,000 South of Johnson Highway on SB US 202

■ 1988 AADT 25,800 South of PA 23 on SB US 202

■ 1983 AADT 30,000
 1988 AADT 40,000 (+5.9%/year)
 South of Henderson Road
 ■ 1983 AADT 27,000
 1988 AADT 38,000 (+7.1%/year)
 North of I-76

Southern limit of Section 5
 I-76 (Schuylkill Expressway)

Figure VIII US ROUTE 202 SECTION 5 AVERAGE DAILY TRAFFIC

Scale: One inch equals approximately 1.4 miles
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between 1980-1990. Employment in these areas grew during the same time period.

AADT volumes along Route 202 in King of Prussia grew an average of almost 7% per year between 1983 and 1988. Given the presence of the major regional mall, and the predominantly retail land use, it can be assumed that a large percentage of these vehicles are shopping-oriented trips. Therefore, this portion of Route 202 functions as both a regional access route and a local road.

Table VI: SECTION 5 POPULATION AND EMPLOYMENT

	Population		Employment			
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change
80% of Upper Merion Township	20911	20578	-1.6%	26341	39160	48.7%
Bridgeport Borough	4843	4292	-11.3%	2442	2966	21.5%
Norristown Borough	34684	30749	-11.3%	18480	21389	15.7%
Section Total	60438	55619	-8.9%	47263	63515	34.4%
Montgomery County	643377	678111	5.4%	304311	461863	51.8%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

A large percentage of weekday peak hour trips on this portion are work trips, and levels of service vary between D and F. This also reflects the significant traffic impact from weekend and seasonal shopping trips. Normal weekend peak hour (Saturday 12:00 Noon to 1:00 PM) service levels vary between C and D. About 7% of the total traffic is trucks. Along the one-way couplet, structures are located close to the roadway. Since on-street parking is permitted in these older, more densely developed areas, and the speed limit is slower than in adjacent sections, congestion is common.

Transit service along Section 5 is the most comprehensive of all Route 202 sections. Included within this section are the only two transportation hubs in the corridor: the Norristown Transporation Center and the King of Prussia Plaza shopping mall. The recently completed Norristown Center brings together light rail service (Route 100), heavy rail service (R-6), and bus service (Routes 91, 93, 96, 97, 98, 99) in the same terminal.

The Transportation Center is located four blocks east of southbound Route 202 and two blocks west of northbound Route 202 on Lafayette Street in Norristown Borough. With the exception of the Route 96 and 99 bus routes, most of the bus routes which serve the Center either cross US 202 or travel on it for only a very short stretch en route to their destinations. In addition, the Route R-6 has two additional stops along southbound Route 202, at the Main Street station and the terminus of the line at the Elm Street station.

In addition, the Route R-6 has two additional stops along southbound Route 202, at the Main Street station and the terminus of the line at the Elm Street station.

In King of Prussia, the mall is a transfer point for commuters as well as a major employment destination in its own right. The following bus routes travel on a portion of Section 5, connecting with other routes at the King of Prussia Plaza:

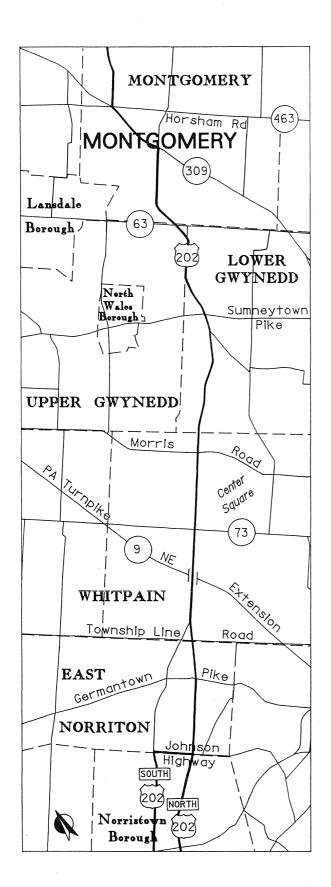
Route	Destination
124	Center City to King of Prussia
125	Center City to Chesterbrook via Mall
92	King of Prussia to West Chester
95	Plymouth Meeting Mall to Paoli Hospital via Mall
99	Norristown to Royersford via Mall
205	Wayne R-5 Regional Rail station to King of Prussia

### Section 6: East Norriton to Montgomeryville

Section 6 traverses five Montgomery County townships: East Norriton, Whitpain, Lower Gwynedd, Upper Gwynedd, and Montgomery (Figure IX). It begins at Johnson Highway in East Norriton Township, and terminates at the intersection with Route 309 and Upper State Road in Montgomeryville, Montgomery Township. In this section, Route 202 is a two-lane 40 or 45 mph roadway for most of its length, with the exception of one 4-lane 55 mph section, between just north of the Wissahickon Creek to just north of Sumneytown Pike. There are a total of 14 signalized intersections, with left-turn storage lanes at major intersections.

Land use is residential, limited retail, and agricultural/open space. Residential development increased significantly along parcels adjacent to Route 202 during the housing boom of the 1980's. The greatest residential growth (113%) occurred in Montgomery Township (Table VII). Residential population in East Norriton Township grew a modest amount (4.8%), and the populations in the other Section 6 municipalities grew an average of 35.3%. Combined, the populations of the municipalities along Section 6 grew by 28.7%.

Overall, employment in the Section 6 municipalities grew about 47%. The greatest employment growth during the 1980's occurred in Whitpain Township, where more than 8000 jobs were added. This was the largest increase in persons employed among all of the Route 202 corridor municipalities. Employment in East Norriton Township grew the least (4.2%) during the same time period.



- Northern limit of Section 6 PA Route 309
- 1988 AADT South of PA 309

14,700

◆ 1988 AADT North of Sumneytown Pike 20,400

■ 1981 AADT 1988 AADT 14,300

20,300

(+5.1%/year)

North of Morris Road ◆ 1988 AADT

South of Morris Road

21,600

1988 AADT South of PA 73

25,600

Figure IX **US ROUTE 202 SECTION 6** 

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**AVERAGE DAILY TRAFFIC** Scale: One inch equals approximately 1.4 miles Delaware Valley Regional Planning Commission

1988 AADT

21,100

North of Johnson Highway

Southern limit of Section 6 Johnson Highway

Land use along Section 6 is typical suburban residential and commercial, where Route 202 functions as both a regional access route and a local road. General levels of service vary along Section 6 according to land use. The physical constraints of the roadway combined with high peak hour volumes causes peak hour levels of service to be around D or F along the entire section. Transit is available along Section 6 via the Route 94 and 96 bus as well as the R-5 Regional Rail train. The route 96 bus travels on Route 202 in East Norriton, Whitpain, and Lower Gwynedd Townships. The Route 94 bus crosses Route 202 on Morris Road in Whitpain Township, and the R-5 Regional Rail line, which crosses Route 202, stops at the Gwynedd Valley station in Lower Gwynedd Township, approximately .6 mile east of Route 202.

Table VII: SECTION 6 POPULATION AND EMPLOYMENT

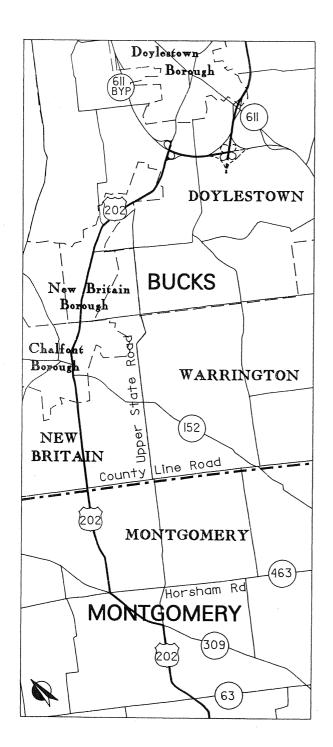
	Population		Employment			
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change
East Norriton Township	12711	13324	4.8%	6517	6788	4.2%
Whitpain Township	11772	15673	33.1%	5648	13671	142.1%
Upper Gwnyedd Township	9487	12197	28.6%	9261	11608	25.3%
Lower Gwynedd Township	6902	9958	44.3%	5648	7237	28.1%
30% of Montgomery Township	1715	3654	113.0%	2480	4046	63.2%
Section Total	42587	54806	28.7%	29554	43350	46.7%
Montgomery County	643377	678111	5.4%	304311	461863	51.8%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

#### Section 7: Montgomeryville to Doylestown

Section 7 traverses part of Montgomery Township in Montgomery County, and New Britain Township, Chalfont Borough, New Britain Borough, and Doylestown Township in Bucks County (Figure X). Within Montgomery Township, Route 202 follows the alignment of Route 309 for 1.1 miles. Land use along this shared part is entirely high-density commercial, with a regional shopping mall, a large strip shopping center, and numerous individual commercial enterprises of varying sizes. The roadway is 4 lanes wide, with signalized driveways and multi-lane intersections. The posted speed limit is 40 mph for the length of this shared section.

North of Route 309, Section 7 returns to two lanes for the remainder of its length and terminates at Doylestown Bypass interchange in Doylestown Township. Land use along this



Northern limit of Section 7
PA Route 611 Bypass

✓ 1981 AADT 16,200
 1988 AADT 19,200
 South of PA 611

■ 1981 AADT 13,700
 1988 AADT 16,400 (+2.6%/year)
 North of New Britain/Chalfont borough line

(+2.5%/year)

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■ 1988 AADT 20,900 South of New Britain/Chalfont borough line

#### Figure X US ROUTE 202 SECTION 7 AVERAGE DAILY TRAFFIC

Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

■ 1988 AADT 15,200 North of County Line Road

■ 1988 AADT 14,300 South of County Line Road

■ 1988 AADT 38,100 On PA 309/US 202 south of PA 463

◆ Southern limit of Section 7

At PA 309/US 202 intersection

6.7 mile section is the same type of suburban residential and limited commercial development predominant along Section 6. Land use in the Borough of Chalfont differs from other Section 7 municipalities in that much of the development along Route 202 predates the road's official designation as a US Route, and is comprised mainly of structures located very close to the cartway. There are eight signalized intersections along the segment of Section 7 north of Route 309. The posted speed limit is varies between 40 and 45 mph with the exception of Chalfont, where the posted speed limit is 35 mph. Bucks County's total population grew about 12.9% between 1980 and 1990, from 479,180 to 541,174. In comparison, the populations of the Section 7 municipalities grew about 36% from 17,921 to 24,318, during the same time (Table VIII). The highest growth rate in Section 7 of Route 202 occurred in Montgomery Township (113%).

**Table VIII: SECTION 7 POPULATION AND EMPLOYMENT** 

	Population		Employment			
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change
70% of Montgomery Township	4003	8525	113.0%	5786	9440	63.2%
New Britain Township	7415	9099	22.7%	1982	2653	33.9%
New Britain Borough	2519	2174	(-)13.7%	565	693	22.7%
Chalfont Borough	2802	3069	9.5%	2119	2717	28.2%
10% of Doylestown Township	1182	1451	22.7%	217	692	218.9%
Section Total	17921	24318	35.7%	10669	16195	51.8%
Montgomery County	643377	678111	5.4%	304311	461863	51.8%
Bucks County	479180	541174	12.9%	219876	230095	4.6%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

Employment in Section 7 communities grew almost 52% between 1980 and 1987. This high growth rate is a result of companies relocating to areas which previously had very little employment, rather than a measure of substantial actual growth. Although almost 5,000 new jobs were added to municipalities along Section 7, the growth rate is comparable to Section 4, where employment grew by 20,000 jobs. Most of the absolute growth from 1980 to 1987 occurred in Montgomery Township (3,654 jobs), at a rate of 63%. In contrast, Doylestown Township has the highest percentage increase (almost 219%), but added only 475 jobs during the same time period. Total employment in Bucks County grew by about 4.6% during the 1980's.

Traffic growth along Route 202 in Section 7 communities was almost 3% per year during this time period, and levels of service vary according to many factors. Severe congestion is common during the peak hours at all major intersections, especially at PA Route 152. The

large number of residents in these communities using Route 202 as their means of access into and out of their neighborhoods causes decreased levels of service (E during peak hours, C/D during off peak) along most of the length of Section 7. It should be noted that there is a significant lunch-hour peak along this section, 12:00-1:00 pm, when LOS is also E. Levels of service are further reduced by the number of traffic signals, the physical constraints of the roadway configuration, and the reduced speed limits through Chalfont. The offset intersection with PA 152 is particularly congested at most times of the day. Route 202 functions in this section mainly as a regional through-road rather than a dual purpose through/local road, since commercial destinations are limited. Train service is available via the Chalfont, New Britain, and Delaware Valley College stops of the R-5 Regional Rail line. No bus service is available along Section 7.

Planning is underway for a new Route 202 alignment which will replace Section 7 and part of Section 6 (Figure XI). This new road was brought about by conditions similar to those experienced by municipalities between West Chester and King of Prussia in the 1960s, which resulted in the highway sections discussed in Sections 2, 3, and 4. Existing roadway capacity is insufficient to accommodate traffic volumes, and severe peak hour congestion is the norm. Traffic growth is expected to continue, and physical constraints prohibit construction of additional capacity. Thus, an entirely new road is required.

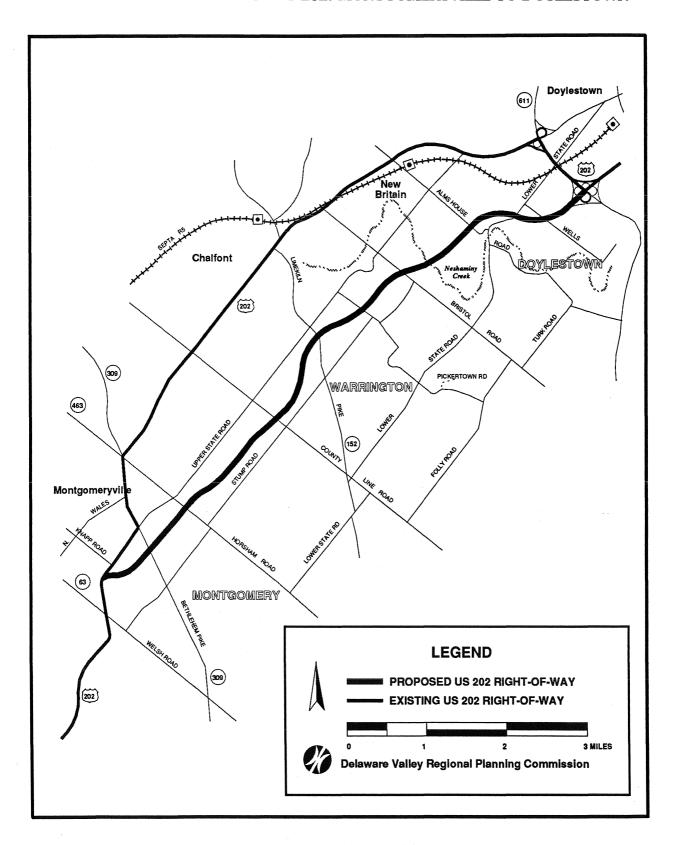
To maximize capacity, this new road will be developed as a four-lane limited access roadway, extending south from the Doylestown Bypass, parallel to the existing Route 202 and terminating at a point just north of Route 63. Rights-of-way for this new roadway are entirely in Doylestown and Warrington Townships in Bucks County and Montgomery Township in Montgomery County.

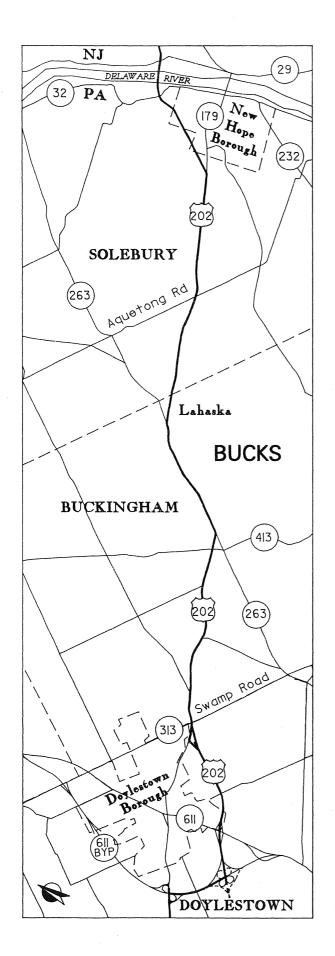
#### **Section 8: North of Doylestown**

Section 8 of Route 202 begins at the Doylestown Bypass interchange and terminates at the Pennsylvania/ New Jersey border just north of New Hope Borough (Figure XII). It is the most rural in character of all the segments. The Doylestown Bypass is actually made up of two separate bypass roads: The Route 611 bypass and the Route 202 bypass. There is a two-mile section which is common to both routes. Land use along both the common segment and the rest of the Route 202 Bypass is predominantly undeveloped. There is one signalized intersection at the southern terminus of the Route 202 Bypass, which is a limited-access roadway with two lanes in each direction and a posted speed of 55 mph.

North of the Doylestown Bypass, the roadway returns to one lane in each direction, with an average posted speed of 45 mph. Between the northern terminus of the Bypass and the toll bridge to New Jersey (1.5 miles), there are seven signalized intersections. Land use along this part of Route 202 is rural residential, agricultural, and wooded open space, with some commercial parcels. In the environs of New Hope Borough, there is also a small mount of

FIGURE XI: NEW ALIGNMENT OF US 202: MONTGOMERYVILLE TO DOYLESTOWN





- Northern limit of Section 8
  Delaware River
- 1989 AADT 7,400 On bridge over Delaware River

#### Figure XII US ROUTE 202 SECTION 8 AVERAGE DAILY TRAFFIC

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Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

■ 1982 AADT 11,600
 1988 AADT 16,200 (+5.7%/year)
 South of PA 263

- 1988 AADT 8,400 North of PA 611
- Southern limit of Section 8 At US 611 Bypass/US 202 South

multi-family residential development, small shopping centers, and other commercial enterprises. North of New Hope Borough, Route 202 once again becomes a high speed roadway for approximately 1.2 miles before crossing the Delaware River.

Population in the Section 8 communities of Doylestown Township, Doylestown Borough, Buckingham Township, Solebury Township, and New Hope Borough, grew 11.3% from 34,498 to 38,396 between 1980 and 1990. Employment growth along Section 8 in the 1980's was 24.3%. Most of the jobs were added in Doylestown Township (Table IX), while both Doylestown and New Hope Boroughs lost employment.

**Table IX: SECTION 8 POPULATION AND EMPLOYMENT** 

	Population		Employment			
Municipality	Official 1980(1)	Official 1990(1)	Percent Change	Official 1980(1)	DVRPC 1987(2)	Percent Change
90% of Doylestown Township	10642	13059	22.7%	1953	6229	218.9%
Doylestown Borough	8717	8575	-1.6%	12052	10742	-10.9%
Buckingham Township	8839	9364	5.9%	2337	4142	77.2%
Solebury Township	4827	5998	24.3%	555	928	67.2%
New Hope Borough	1473	1400	-5.0%	2340	1873	-20.0%
Section Total	34498	38396	11.3%	19237	23914	24.3%
Bucks County	479180	541174	12.9%	219876	230095	4.6%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October, 1988

Although actual growth was limited in Section 8 municipalities, the number of trips originating in or bound for New Jersey increased significantly throughout the corridor. Between 1980 and 1988, vehicle volumes on the Route 202 bridge over the Delaware River grew almost 6% per year. Accordingly, traffic along section 8 grew by about 40% between 1980 and 1988. Levels of service, however, remain generally acceptable (C) along this section. There is no public transportation along this part of Route 202.

#### 4 THE FUTURE CORRIDOR

#### Forecasted growth

A continuing healthy economy is forecasted for the Delaware Valley region, and continued population and employment growth is expected in all counties. According to DVRPC population and employment forecasts, most of the municipalities along the Route 202 corridor are expected to see growth in both population and employment into the year 2010. Some municipalities, such as those along Sections 1, 7, and 8 are forecasted to see greater growth in population than in employment, while Sections 2, 3, and 4 will see much greater growth in employment.

Bucks County is forecasted to see the greatest growth in both population (29.6%), and employment (16%), while Delaware County is forecasted to remain the most stable (3% population growth and 5.1% employment growth). Table X details DVRPC population and employment forecasts in all Route 202 counties.

Table X POPULATION AND EMPLOYMENT FORECASTS FOR COUNTIES

	Population		Employment			
	US Census 1990(1)	Forecast 2010(2)	Percent Change	Forecast 1987(3)	Forecast 2010(4)	Percent Change
Bucks County	541174	701700	29.6%	247500	287100	16.0%
Chester County	376396	418950	11.3%	178750	205700	15.1%
Delaware County	547651	564140	3.0%	228600	240300	5.1%
Montgomery County	678111	746600	10.1%	483400	544800	12.7%

<sup>(1)</sup> US Census Bureau; (2) DVRPC Year 2010 Planning Process Population; and Employment Forecasts, October 1988; (3) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October 1988; (4) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October 1988

Population and employment growth are forecasted to be moderate in the municipalities along Route 202. The greatest population growth between 1990 and 2010 is targeted for the Section 8 municipalities (56.8%), and the greatest employment growth is forecasted for the Section 2 municipalities (26.8%). Table XI shows future population and future employment forecasts for each section of Route 202.

Table XI POPULATION AND EMPLOYMNENT FORECASTS FOR SECTIONS

	]	Population		Employment		
	Prelimin. 1990(1)	Forecast 2010(2)	Percent Change	Forecast 1987(3)	Forecast 2010(4)	Percent Change
Section 1 Total	30619	38085	24.3%	10926	13191	15.4%
Section 2 Total	43815	50315	14.8%	20466	25949	26.8%
Section 3 Total	22412	25775	15.0%	24760	30600	23.6%
Section 4 Total	19158	20335	6.2%	17760	22270	25.4%
Section 5 Total	55519	58140	4.7%	63515	70730	11.3%
Section 6 Total	54806	59900	9.2%	43349	54360	25.4%
Section 7 Total	24318	32977	35.6%	15587	17930	15.0%
Section 8 Total	38396	60213	56.8%	21563	26100	21.0%
Corridor totals	289043	345740	19.6%	218434	261130	19.5%

<sup>(1)</sup> US Census Bureau preliminary results, August 1990; (2) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October 1988; (3) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October 1988; (4) DVRPC Year 2010 Planning Process Population and Employment Forecasts, October 1988

#### **Highway Improvement and Development Plans**

The pace of development along the Route 202 has slowed somewhat in the past few years. Although the attractiveness of the corridor remains high, the number of vacant parcels is limited. Municipal officials in high growth areas now take the time to try and mitigate traffic impacts of new development as much as possible, and many developers face a strong anti-growth sentiment among the residents of these townships.

Expanding employment centers continue to add trips to the highway, further reducing levels of service. Municipalities and developers have been reluctant to shoulder the escalating costs of building increased capacity, preferring to await state funding for such projects. In most cases, their policy stems from the regional nature of Route 202 traffic. Since the road in each municipality serves so much through traffic from other areas, elected officials feel they should not be forced to improve the road to serve traffic generated outside of their community. As a result, there is little continuity between municipalities' plans for Route 202.

PennDOT allocates monies for highway projects according to the bi-annual Twelve Year Highway and Bridge Program, commonly known as the 12-year plan. The plan itself is broken down into programming periods known as the first, second, and third four years. The most recent plan was adopted in July of 1989, and will be updated in July of 1991.

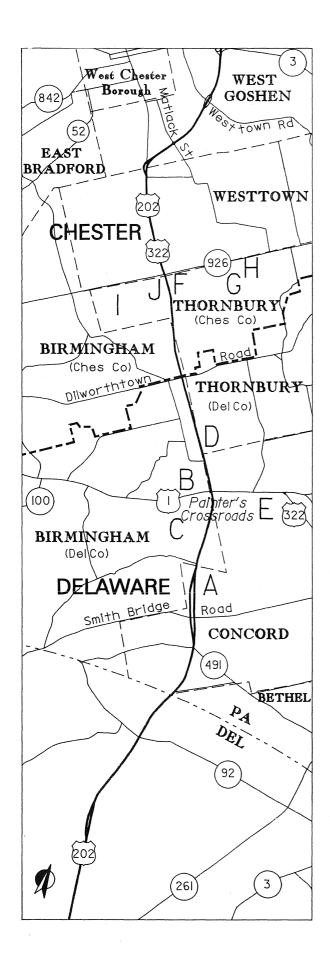
The current 12-year plan lists 19 improvement projects along Route 202 in the DVRPC region. Project details are listed in Appendix I. Projects are distributed among the sections as follows:

Section 1:	6 projects
Section 2:	1 project
Section 3:	2 projects
Section 4:	1 project
Section 5:	2 projects
Section 6:	1 project
Section 7:	5 projects
Section 8:	1 project

Major developable parcels and development projects along Route 202, which are either planned or under construction, are shown in Figures XIII through XX. Planned development along Section 1 (Figure XIII) includes the Glen Eagle Square shopping center on Route 202 in Concord Township, development in the northwest and southwest quadrants at Painters Crossroads, and a mixed-use development with a total of one-million square feet on Route 202 in Thornbury Township, Delaware County.

Also in Delaware County, there is a 250-acre site on US 322/US 1 just east of Painters Crossroads where there are tentative development plans for an office campus. If developed, this site will contribute significant additional trips to Route 202. Major planned developments along the Chester County portion of Section 1 include the 100,000 sq. ft. Commons at Thornbury office development and four residential tracts. A total of 115 units are planned for three of the parcels. These developments, and those in other sections of Route 202, are more fully detailed in Appendix II.

A study is currently underway in New Castle County, Delaware, to evaluate the traffic impacts of four large-scale developments on Route 202 just south of Pennsylvania. Almost 1,700,000 square feet of shopping, 800,000 square feet of office space, and 400 residential units are proposed within one-half mile of the Pennsylvania state line. A fifth parcel is under consideration on Route 202 in the Wilmington area north of the I-95 interchange. Proposed for this site are a 1.5 million sq. ft. shopping center and a 300-room hotel.



■ Northern limit of Section 1

Matlack Street

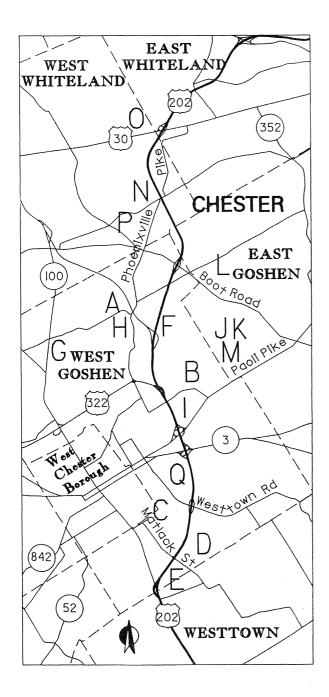
#### Figure XIII ROUTE 202 SECTION 1 DEVELOPMENTS

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Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

- A Glen Eagle Square
- **B** Village at Painter's Crossing
- C Chadds Ford Business Campus
- D Craig Tract
- **E** Concord Interplex
- F Commons at Thornbury
- **G** Deer Pointe
- **H** Jones Tract
- I Thornbury Knoll
- J Robinson Tract

Southern limit of Section 1
 Delaware state line

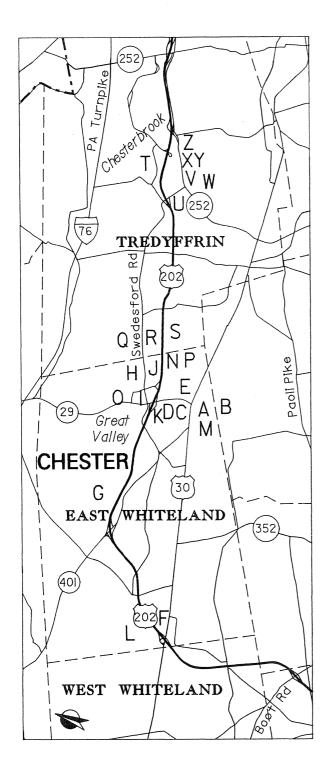


- Northern limit of Section 2
  US Route 30
- A West Goshen Business Park
- **B** Brandywine Lakes
- C Auto Park Boulevard
- **D** Hagerty Boulevard
- E Willowbrook Lot #3
- F Brandywine Business Court (Phase II)
- **G** Greenhill Shoppes
- H Park Valley Corporate Center
- I Embassy Court
- J Brandywine Industrial Park
- K Commons at Goshen
- L Hershey Mill Village
- M Goshen Corporate Park West
- N Glen Loch
- O Churchill
- P Little Store
- **Q** County Office Building
- ◆ Southern limit of Section 2

  Matlack Street

Figure XIV ROUTE 202 SECTION 2 DEVELOPMENTS

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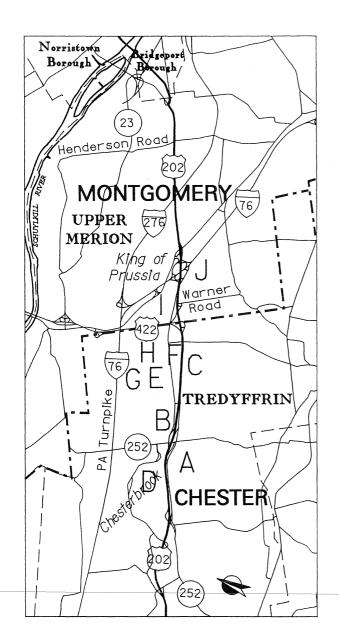


Northern limit of Section 3 PA Route 252 (Paoli exit)

#### Figure XV ROUTE 202 SECTION 3 DEVELOPMENTS

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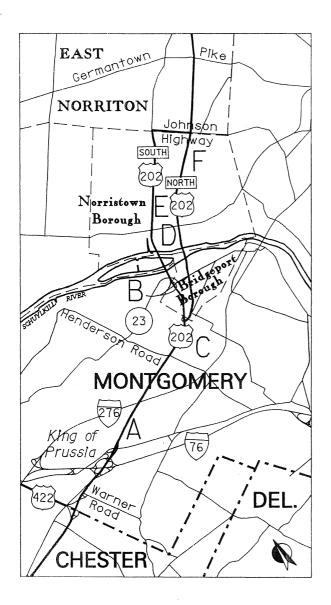
- A Rowan Terrace
- **B** Harron Corporate Headquarters
- C Valleybrook Plaza
- D Westgate Plaza
- E MacIntosh
- F MSL Sheraton
- G Rouse Parcel #1 South
- **H** Mobile Corporate Headquarters
- I Great Valley Shops
- J Rouse Parcel #14
- K Valleybrook South
- L Churchill Valley Crossing
- M Staats Self Storage
- N Great Valley East Lots #11 and 12
- O Great Valley East Lot #6
- P Winthrop Corporate Park Lot #1
- **Q** Rouse Associates
- R Unisys
- S Staats Parcel
- T Chesterbrook Corporate Park
- **U** Bituminous Service
- V Quarry Office Park
- Southern limit of Section 3
  US Route 30
- W Latana
- X Dominion Realty
- Y Linpro
- Z Philadelphia Electric



#### Figure XVI ROUTE 202 SECTION 4 DEVELOPMENTS

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- Northern limit of Section 4 I-76 (Schuylkill Expressway)
- A AMP Special Inds/Manison House
- **B** Gateway Shopping Center
- C Devon Industrial Park
- **D** Wilson Tract
- E Bay Colony Industrial Park
- F Certainteed
- **G** Drummers Lane
- H Glenhardie Corporate Center
- I Valley Forge Golf Club
- J Valley Forge Estates
- ◆ Southern limit of Section 4
  PA Route 252 (Paoli exit)



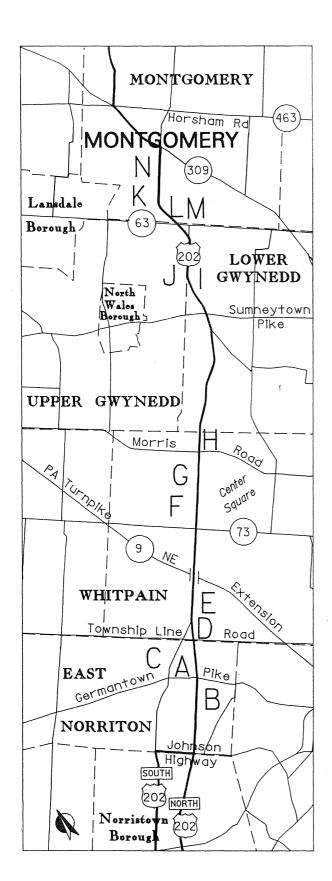
- Northern limit of Section 5
  Johnson Highway
- A Hampton Inn
- **B** Port Henley
- C Glasgow
- D Lafayette Place
- **E** Atlantic States Development
- F Sacred Heart Hospital

#### Figure XVII ROUTE 202 SECTION 5 DEVELOPMENTS

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Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

■ Southern limit of Section 5
I-76 (Schuylkill Expressay)



Northern limit of Section 6 PA Route 309

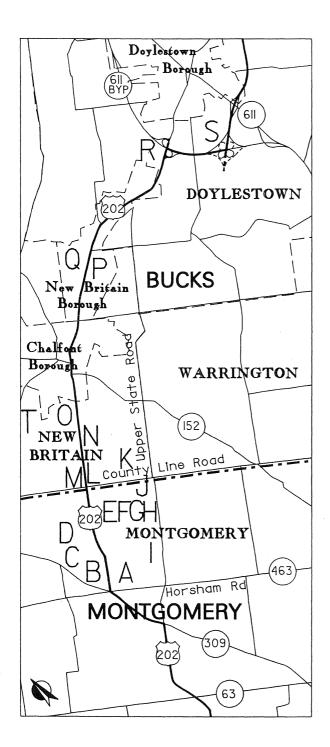
> Figure XVIII ROUTE 202 SECTION 6 DEVELOPMENTS

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Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

- A Wargo Bandolini Properties
- **B** Development Support Services
- C Hillcrest Plaza
- D Blue Bell Village
- E Mews at Blue Bell
- **F** Alcar Restaurants
- **G** Ballenrose
- **H Kollage Acres**
- I Gwynedd Knoll
- J Gwynedd Estates
- K Gwynedd Point
- L Gwynmont Farms retail
- M Gwynmont Farms residential
- N Welsh Village

Southern limit of Section 6
 Johnson Highway

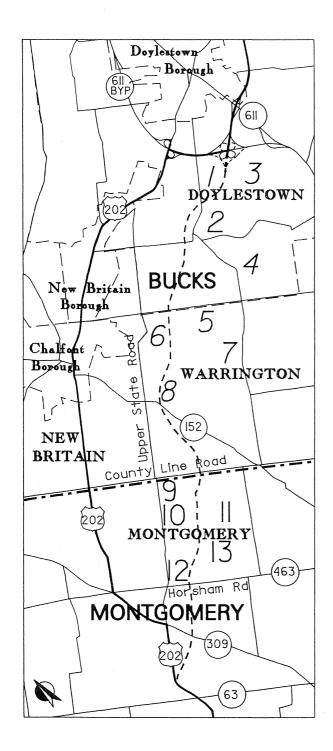


- Northern limit of Section 7 PA Route 611 Bypass
- A Montgomery Mart
- **B** Pine Crest
- C Victoria Court
- D Woodbrook
- **E** Forest Trail
- F Victoria Wood
- **G** Canterbury Three
- **H** Stone Ridge
- I Montgomery Hill
- J Wethersfield
- K Highpoint and Highlands
- L New Britain Professional Offices
- **M** Brittany Square
- N The Shoppes at Schoolhouse Road
- O Chal-Brit Shopping Center expansion
- P Pennsbury Coatings
- Q Forest Park
- **R** Country Commons
- S Burpee Tract
- T Fox Hollow
- ◆ Southern limit of Section 7

  At PA 309/US 202 intersection

Figure XIX ROUTE 202 SECTION 7 DEVELOPMENTS

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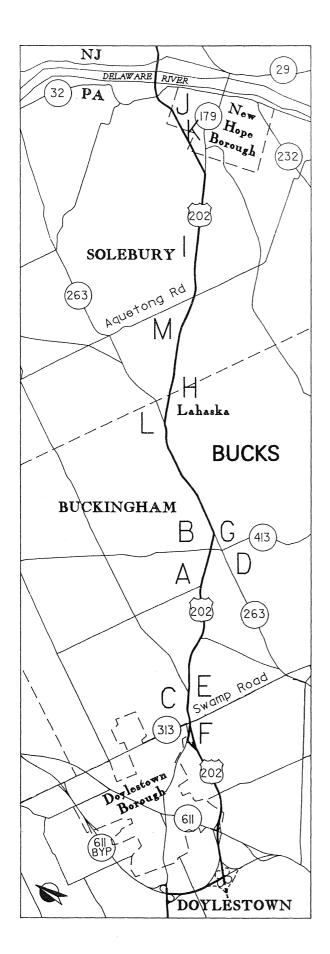


- Northern limit of New Alignment PA Route 611 Bypass
- 1 Valley View
- 2 Doylestown Crossing
- 3 Doylestown Lea
- 4 Doylestown Knoll
- 5 Warrington Oaks
- 6 Lapp Tract
- 7 Rothrock Tract
- 8 Geyer Tract
- 9 Zitin tract
- 10 Westgate
- 11 Ridings of Montgomery
- 12 Montgomery Ridge
- 13 Montgomery Green

# Figure XX Page 45 ROUTE 202 NEW ALIGNMENT DEVELOPMENTS

Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

■ Southern limit of New Alignment
North of PA Route 63/US 202 intersection



■ Northern limit of Section 8 Delaware River

#### Figure XX ROUTE 202 SECTION 8 DEVELOPMENTS

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Scale: One inch equals approximately 1.4 miles
Delaware Valley Regional Planning Commission

- A Hunter's Crossing
- **B** Buckingham Green
- C Adam's Ridge
- D Tyson Tract
- E Buckingham Chase
- F Yorkshire Chase
- G Buckingham Knoll
- H Buckingham Shopping Center
- I Solebury Farms
- J Village II
- K Union Camp
- L Fox Briar (Peddlers' Village expansion)
- M Estates at Honey Hollow

Southern limit of Section 8
At US 611 Bypass/US 202 South

There are a total of 16 parcels proposed for development in the environs of Section 2 (Figure XIV). The largest of these is the Churchill mixed use development in West Whiteland Township. The tract is massive, and spans the boundary of West Whiteland and East Whiteland Townships. Plans for the West Whiteland portion include single family, townhouse, and apartment residential units, as well as a hotel, office, and light industrial/office/warehouse, or "flex" space. Other major developments along Section 2 include the Glen Loch office development, the mixed-use Hershey Mill Village development, and additional construction at the Brandywine Industrial Park.

Plans for the remainder of the Section 2 parcels include 196,000 sq. ft. of office space, 380,000 sq. ft. flex space, and almost 84,000 sq. ft. of retail development. There are also more than 300 acres of vacant land under consideration for commercial, office, and industrial development that do not have final building plans.

Development activity is the greatest along Section 3, where there are 26 parcels under consideration in the vicinity of Route 202. As in Section 2, the largest of these is the mixed use Churchill tract. The East Whiteland portion includes single family, townhouse, and apartment residential development, and a hotel, office, and retail space.

Proposed development in the majority of the remaining parcels along this corridor consists of office space, including plans for more than 3.6 million additional square feet (Figure XV). Other developments planned along this portion of the US 202 corridor includes two hotels with a total of 287 rooms or suites (two parcels), a total of 312 townhouses (two parcels), a total of 121,000 sq. ft. of retail space (two parcels), and 67,000 sq. ft. of flex space (one parcel).

As in section 3, most of the development proposed for Section 4 is office space. Of the nine parcels, five are office developments totaling 920,000 square feet. An 88 room hotel, 40,000 sq. ft. retail store, and 623 townhouse development are planned for three of the other parcels. The largest parcel (132 acres) is the Valley Forge Golf Club in Upper Merion Township. The parcel, which is for sale as of this writing, is centrally located among several of the King of Prussia area's larger office campuses and therefore attractive for similar uses. It is currently zoned for recreational use and actual development plans are tentative. Section 4 development sites are shown in Figure XVI.

Section 5 parcels in Upper Merion Township are almost fully developed, and no re-development plans are under consideration. There are two parcels under consideration as of this writing, and a 300-unit apartment complex is planned at Port Henley and the 71-acre parcel just east of Henderson Road. Commercial development is planned for this parcel. In Norristown Borough, almost 150,000 square feet of office space is planned (Figure XVII).

In contrast to Sections 1, 2, 3, and 4, most of the planned development along Section 6 is residential. While a modest amount of office and commercial space is planned in East Norriton Township, redisential development is the primarily for the other Section 6 townships. In East Norriton, 246 new residential units are planned. In Whitpain, Lower Gwynedd, and Montgomery Townships, nine out of the total of twelve available parcels are listed as residential developments, with current plans totalling more than 1800 units (Figure XVIII). The largest of these is the Ballenrose development, located in the southwest quadrant of the intersection of Route 202 and Morris Road in Whitpain Township. Development plans include 850 dwelling units and an 18-hole golf course. Retail uses are planned for the other two vacant parcels along Section 6.

All of the substantial development along Section 7 is taking place in Montgomery Township (Figure XIX). The proposed 200,000 sq. ft. redevelopment of the Montgomery Mart shopping center is the only parcel planned for commercial use. More than 1600 total units are planned for the fourteen other developable parcels in the environs of Route 202. There are no major developable parcels in the Bucks County segment of Section 7. In addition, there are 13 planned developments, representing more than 1400 dwelling units, along the proposed new alignment of Route 202. These parcels are shown in Figure XX.

Planned Section 8 development (Figure XXI) is also predominantly residential. More than 400 units are planned on nine of the eleven developable parcels. The largest of these is Solebury Farms, located in Solebury Township. This cluster development of 200 dwellings is unique due to the large size of the parcel—the site plan was created to preserve an unusually large percentage of the parcel as open space. Commercial development is planned for two of the other developable sites. Development plans have not been submitted for the remaining vacant parcels.

#### 5 A STRATEGY FOR US 202

#### Recent plans for improvements

Development trends, locations of major suburban employment centers, and a general change in employment distribution from manufacturing jobs in the city to service-sector jobs in the suburbs has created a substantial shift in commuting patterns in the DVRPC region. In the past, commuting patterns were primarily radial, with trips oriented between suburban residential areas and workplaces in the city. Current commuting patterns are increasingly circumferential, going between suburbs without passsing through the city.

As suburban employment grows and activity centers expand, this circumferential commuting trend is expected to grow. Roadways facilitating this travel pattern have emerged as key to regional mobility. Route 202 has been identified as one of these circumferential highways. As such, it is considered by many to be crucial to the region's economy, and has been the focus of numerous local planning initiatives.

These initiatives include efforts by local and regional officials to promote the need for improvements on specific sections of Route 202 to state and federal agencies. Several major improvement projects are planned for the corridor which can be directly attributed to these initiatives. One is a new alignment in Montgomery and Bucks Counties between a point just north of PA 63 in Montgomery Township and the already constructed Doylestown Bypass interchange in Doylestown Township. This plan is more fully described in Appendix IV, which is an abridgement of the July 1984 DVRPC report US 202 Montgomeryville to Doylestown. A second project, in Montgomery County, recommends widening of US 202 to two lanes in each direction with a center left turn lane from US 309 south to Johnson Highway at the Norristown boundary. A report on this project, US 202 Norristown to Montgomery Township, published by DVRPC in November 1989, is summarized in Appendix V. These projects are both in their preliminary stages and have been funded for engineering and environmental impact statements. Another project, in Chester and Montgomery Counties, recommends the widening of US 202 from four lanes to six lanes between the Paoli interchange in Tredyffrin Township and the I-76 interchange in Upper Merion Township. Another initiative of local officials of Chester and Delaware Counties, and the Brandywine Conservancy developed an access management plan for Route 202 and Route 1 in the Section 1 communities. This plan included recommendations prepared by DVRPC for traffic flow improvements. Finally, a partnership of local officials and employers cooperated in rebuilding the PA Route 29 interchange with US 202 to improve local circulation.

Some township comprehensive plans include recommendations for the future status of Route 202. One such plan is the Westtown (Chester County) Comprehensive Plan, which incorporates recommendations for access management on US 202 within the township. At the regional level, Route 202 has been the subject of many planning studies, listed in Appendix III, which

recommend various roadway improvements. In addition, recommendations for improvements to this roadway are included in virtually all of the traffic impact analyses prepared for individual development sites along the corridor.

### A Future Development Strategy for US 202

With several planning efforts recently completed or underway and more to come in the near future, an overall strategy for US Route 202 should be articulated. Although few of the plans reviewed for this report state policies specifically for US 202, a strategy can be synthesized from the more general goals and objectives. Making inferences from the planning documents, this strategy can be expressed in the following eight points:

- 1 Maintain adequate capacity and travel times in order to preserve US 202's role as a regional circumferential transportation corridor.
- 2 Limit new highway rights-of-way to segments where the existing roadway cannot be made to perform at the desired level without major disruption to the municipalities.
- 3 Give priority to improvements in those areas where the corridor is used to access and link major suburban activity centers.
- 4 Increase private sector participation in transportation management programs for the purpose of increasing vehicle occupancy and reducing peak hour congestion.
- 5 Maximize the use of US 202 as a means to enhance modal integration by making the roadway convenient for transit vehicles and constructing park-and-ride lots.
- 6 Explore the use of low cost technological means to improve traffic flow and safety to minimize the need for costly construction projects.
- 7 Emphasize improvements which lower energy consumption and reduce emissions of pollutants, particularly hydrocarbons.
- 8 Provide controls and inducements to consolidate adjacent development, thereby reducing the number of access points to and from US 202.

# Consistency with applicable plans

The DVRPC Regional Mobility Policy Analysis identifies suburban mobility as one of the most important issues facing the region today. Recommendations in this report target those roads considered to be of strategic importance to the region. Solutions to mobility problems presented in this report include strengthening connections to activity centers, increasing capacity on critical routes, and decreasing the need for travel. Route 202 is identified in this report as one of the region's strategic highways, and the Route 202 strategy is consistent with these regional transportation planning policies.

In October of 1988 DVRPC presented the <u>Year 2010 Regional Development Strategy</u>. This policy statement is directed toward development management rather than transportation issues. The thrust of this report is that growth should be focused. The Strategy recommends that existing metropolitan centers should be expanded and that future growth be concentrated in areas around these centers. Painters Crossroads, West Chester, Great Valley, King of Prussia, Norristown, Montgomeryville, Doylestown, and New Hope, all served by Route 202, are identified in this report as major suburban activity centers. Open space and farmland preservation are also recommended, and several of the undeveloped parcels along Route 202 in Chester and Bucks Counties are identified as candidates for either open space or farmland preservation. The strategy suggested for US 202 is consistent with this plan.

The strategy conforms to Pennsylvania and U.S. transportation policies. At the state level, projects with the greatest cost/benefit ratio are often given funding priority. At the national level, the National Transportation Policy agenda includes maintaining the nation's transportation system, advancing transportation technology, and protecting the environment and the quality of life, as well as fostering a sound financial base for transportation, ensuring that the transportation network supports public safety, and keeping the transportation industry sound and competitive.

DVRPC prepared a <u>Transportation-Air Quality Plan</u> in 1982 which was subsequently included in Pennsylvania's State Implementation Plan (SIP). These plans failed to achieve the national ambient air quality standards for ozone by 1987, as did plans for virtually all metropolitan areas in the country. It is anticipated that Congress will enact Clean Air Act Amendments in 1990 which will likely require additional planning for emission reduction. Also, the Act will require "conformity" between transportation plans and programs and the adopted SIPs. This conformity needs to be defined by USDOT and EPA, but it will probably be interpreted to mean that all plans and programs, as a whole, need to demonstrate no adverse impact on air quality.

In general, highway improvement projects tend to improve air quality, increasing speeds and reducing travel times. Major projects, however, may induce additional trips by encouraging relocations which require longer trips, or which can no longer be served practically by public transit. The inducement of growth caused by transportation improvements is a very difficult effect to quantify. Some growth may occur with or without the improvement. Also, if the

improvement is not made, growth may occur in alternative locations which may or may not be more desirable for air quality. Nevertheless, improvements to US 202 in areas which are already developed and therefore less likely to cause relocation of residents or jobs, or which enhance the accessibility to transit, are more demonstrably favorable for air quality.

Suburban mobility, and the importance of maintaining and improving the existing major radial and circumferential highways, are at the forefront of transportation planning in the DVRPC region. When used as a guide for future transportation projects along the Route 202 corridor, the strategy allows improvements to be focused where the need is greatest and the benefit highest. Carried out, the strategy will cause US Route 202 to emerge as a modern, 21st century highway which meets the needs of both its host communities and its users.

# Appendix I: Pennsylvania Department of Transportation Twelve Year Highway and Bridge Program Roadway Improvement Projects on US 202

Section 1		
Location	Description	Program Period
Delaware County:		
US 202/US 1	intersection improvement	1st 4 years
US 202	improvement study (engineering phase)	1st 4 years
US 202	safety improvements (engineering phase)	2nd 4 years
	safety improvements (construction)	3rd 4 years
Chester County:		
US 202/ PA 926	intersection improvements	1st 4 years
Thornbury and Westtown Townships	safety improvements (engineering and ROW acquisition phase)	2nd 4 years
Thornbury and Westtown Townships	safety improvements (construction)	3rd 4 years
Section 2		
Location	Description	Program Period
US 202 at Matlack Street	signal improvement	1st 4 years (completed)

Section	•
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**Description Program Period** Location Widen to 72' US 202 from 2nd 4 years US 30 to PA 252 (engineering and ROW acquisition phase) (Paoli Interchange) US 202 from Widen to 72' 3rd 4 years US 30 to PA 252 (construction) (Paoli Interchange) Section 4 **Description Program Period** Location US 202 from Widen to 72' 1st 4 years I-76 to PA 252 (Paoli Interchange) Section 5 Location **Description** Program Period De Kalb Pike Bridge bridge replacement 1st 4 years over Schuylkill River De Kalb Pike Bridge bridge replacement 2nd 4 years over Reading RR Tracks Bridgeport Borough Section 6 **Description** Program Period Location US 202 from Norristown widening study 1st 4 years (engineering phase) to Montgomeryville

# Section 7

Location	Description	Program Period
Route 309/202 from North Wales Road to "5 Points"	add lane (engineering phase)	1st 4 years
Route 309/202 intersection with Upper State Road	intersection improvement	1st 4 years
US 202 at County Line Road	intersection improvement	1st 4 years
US 202 betw Montgomeryville and Doylestown	4 lane divided relocation (engineering phase)	1st 4 years
US 202 bridge over Neshaminy Creek (west branch) Chalfont Borough	replacement	3rd 4 years
Section 8		

Location	<u>Description</u>	Program Period
US 202 bridge over Lahaska Cr Buckingham Township	replacement	1st 4 years

# Appendix II: Planned Major Developments in the US 202 Corridor

Section 1			
Development Name	Location	Type	Township
Delaware County:			
Glen Eagle Square	northern terminus of one-way couplet Concord Township	shopping center	Concord
Village at Painter's Crossing	intersection, US 1/US 202 northwest quadrant	office/retail	Birmingham
Chadd's Ford Business Campus	intersection, US 1/US 202 southwest quadrant	office	Birmingham
Craig Tract	US 202 just north of Concord Township	mixed use: office/retail/apartments 1,000,000 sq. ft.	Thornbury
Concord Interplex	US 322/US 1 east of US 202	office 250 acres	Concord
Chester County:			
Commons at Thornbury	SE corner, US 202/PA 926	office 100,000 sq.ft.	Thornbury
Deer Pointe	South Concord Road, south of Route 926 xx miles east of US 202	residential 66 single family	Thornbury
Thornbury Knoll	South New Street, south of PA 926	residential 28 single family	Thornbury
Jones Tract	east side South Westbourne south of PA 926	residential 21 single family	Thornbury
Robinson Tract	US 202/ PA 926 southwest quadrant	residential 100 acres	Thornbury

Section 2

Development Name	Location	Type	Township
West Goshen Business Park	PA 29 and Ashbridge Road	office 60.2 acres	West Goshen
Brandywine Lakes	adjacent to Brandywine Airport	industrial 50.1 acres	West Goshen
Auto Park Boulevard	Nields Street and Westtown Road	commercial 59.2 acres	West Goshen
Hagerty Boulevard	Matlack Street opposite Willowbrook Lane	commercial 41.9 acres	West Goshen
Willowbrook Lot #3	Between US 202 and Willowbrook Lane	office 75,362 sq. ft.	West Goshen
Brandywine Business Court phase II	Airport Road and Wilson Road	flex 141,913 sq. ft.	West Goshen
Greenhill Shoppes	Route 100 at Greenhill Road	retail 59,400 sq. ft.	West Goshen
Park Valley Corp. Center	Phoenixville Pike near Greenhill Road	flex 110,000 sq. ft.	West Goshen
Embassy Court	Turner Lane	office 121,000 sq. ft.	West Goshen
Chester County Office Building	Westtown Road and US 202	office 265,000 sq.ft.	West Goshen
Brandywine I P	Wilson Drive and Airport Road	industrial 440,000 sq. ft.	East Goshen
Commons at Goshen	Wilson Drive and Airport Road	flex 128,300 sq. ft.	East Goshen
Hershey Mill Village	Boot Road and Greenhill Road	1200 Townhouses 86,000 sq. ft. retail 38,000 sq. ft. office	East Goshen
Goshen Corp. Park West	Airport Road opp. Linden Lane	93 acres	East Goshen
Glen Loch	Phoenixville Pike and King Road	office 1,500,000 sq. ft.	West Whiteland

# Section 2 (cont.)

Development Name	<u>Location</u>	Type	<u>Township</u>
Churchill	Swedesford Road and Ship Road	mixed use: 687 single family 475 townhouses 645 apartments 200-room hotel 1.5 million sq. ft. office 2.3 million sq. ft. flex	West Whiteland
Little Store	Boot Road near Ship Road	retail 24,400 sq. ft.	West Whiteland
Section 3			
Development Name	Location	<u>Type</u>	Township
Rowan Terrace	Old Lancaster Pike near Warren Avenue	mixed use: 62 townhouses 27,900 sq. ft. office	East Whiteland
Harron Corporate Headquarters	Old Lancaster Pike and Warren Avenue	office 20,750 sq. ft.	East Whiteland
Valleybrook Plaza	US 30 at PA 29	commercial/hotel 54,436 sq. ft. 122 suites	East Whiteland
Westgate Plaza	US 30 at Marple Lane	retail 58,200 sq ft	East Whiteland
Macintosh	PA 29 south of Matthews Rd	office/retail 95,745 sq. ft.	East Whitleland
MSL Sheraton	US 30 at US 202	hotel 165 rooms	East Whiteland
Rouse Parcel 1 South	Lapp Road near Wilburdale Road	office 91,952 sq. ft.	East Whiteland
Mobile Corporate Headquarters	Swedesford Road near Liberty Boulevard	office 126,000 sq. ft.	East Whiteland
Great Valley Shops	Swedesford Road near Liberty Boulevard	retail 63,055 sq. ft.	East Whiteland

# Section 3 (cont.)

Development Name	Location	Type	Township
Rouse Parcel 14	Swedesford Road near Liberty Boulevard	office 114,750 sq. ft.	East Whiteland
Valleybrook South	PA 29 south of Matthews Road	office 240,000 sq. ft.	East Whiteland
Churchill	Swedesford Road west of Matthews Road	mixed use: 25 single family 200 townhouses 200 apartments 150 room hotel 2.1 million sq. ft. office 30,000 sq. ft. retail	East Whiteland
Staats-Self storage	US 30 at PA 29	warehouse 75,840 sq. ft.	East Whiteland
Great Valley East Lots 11 & 12	Valley Stream Parkway	office/retail 59,250 sq. ft.	East Whiteland
Great Valley East Lot 6	Valley Stream Parkway	flex 67,200 sq. ft.	East Whiteland
Winthrop Corporate Park Lot 1	Matthews Road south of US 202	office 54,300 sq. ft.	East Whiteland
Rouse Associates	Swedesford Road and Chruch Road	office 500,000 sq. ft.	Tredyffrin
Unisys	Swedesford Road near Church Road	office 40,000 sq. ft.	Tredyffrin
Stats Parcel	Matthews Road and Church Road	office 800,000 sq. ft.	Tredyffrin
Chesterbrook Corporate Center	Duportail Road and Morris Road	office 250,000 sq. ft.	Tredyffrin
Bituminous Service	Bearhill-Paoli Road near Heatherstone Road	residential 250 Townhouses	Tredyffrin
Quarry Office Park	Swedesford Road near Westlakes Drive	office 111,000 sq. ft.	Tredyffrin

Section 3 (cont.)			
Development Name	Location	Type	Township
Latana	Swedesford Road and Howelville Road	office 375,000 sq. ft.	Tredyffrin
Dominion Realty	Swedesford Road and Cassatt Road	office 297,500 sq. ft.	Tredyffrin
Linpro	Swedesford Road and Cassatt Road	office 397,000 sq. ft.	Tredyffrin
Philadelphia Electric	Swedesford Road and Cassatt Road	office 50,000 sq. ft.	Tredyffrin
Section 4			
Development Name	Location	Type	<u>Township</u>
AMP Special Industries/ Manison House	US 202 at Contention Lane	hotel 88 suites	Tredyffrin
Gateway Shopping Center	PA 252 and Anthony Wayne Drive	retail 40,375 sq. ft.	Tredyffrin
Devon Industrial Park	West Valley Road and Devon Park Drive	office 130,000 sq. ft.	Tredyffrin
Wilson Tract	Chesterbrook Boulevard opposite Wilson Road	residential 623 townhouses	Tredyffrin
Bay Colony Industrial Park	Swedesford Road and Old Eagle School Road	office 400,000 sq. ft.	Tredyffrin
Certainteed	Swedesford Road and Old Eagle School Road	office 135,000 sq. ft.	Tredyffrin
Drummers Lane	Drummers Lane and Walker Road	office 105,000 sq. ft.	Tredyffrin
Glenhardie Corporate Center	Drummers Lane and Walker Road	office 280,000 sq. ft.	Tredyffrin
Valley Forge Golf Club	North Gulph Road	132 acres	Upper Merion
Valley Forge Estates	Croton Road at King of Prussia Road	54 single family	Upper Merion

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Development Name	Location	Type	Township
Hampton Inn	US 202 south of PA Turnpike	hotel 70,200 sq. ft.	Upper Merion
Port Henley	Valley Forge Road at Third Ave	300 apartments	Upper Merion
Glasgow	north side US 202 east of Henderson Road	commercial 71 acres	Upper Merion
Lafayette Place	Lafayette Street and Swede Street	office/commercial 100,000 sq. ft	Norristown Bor.
Atlantic States Development	Main Street and Markley Street	office/commercial 47,563 sq. ft.	Norristown Bor.
Sacred Heart Hospital	US 202 northbound and Fornance Street	hospital addition 30,000 sq. ft.	Norristown Bor.
Section 6			
Development Name	<u>Location</u>	Type	Township
Wargo Bandolini Properties	DeKalb Pike and Germantown Pike	office/commercial 288,600 sq. ft.	East Norriton
Development Support Services, Inc.	US 202 between		77 . X7 . I.
	Johnson Highway and Germantown Pike	20 single family 120 townhouses 30,000 sq. ft. office	East Norriton
Hillcrest Plaza	Johnson Highway and	120 townhouses	East Norriton  East Norriton
	Johnson Highway and Germantown Pike Germantown Pike and	120 townhouses 30,000 sq. ft. office office/commercial	
Hillcrest Plaza	Johnson Highway and Germantown Pike  Germantown Pike and Swede Street  east side US 202	120 townhouses 30,000 sq. ft. office  office/commercial 55,500 sq. ft.  residential	East Norriton

Section 6 (cont.)			
Development Name	<u>Location</u>	Type	Township
Blue Bell Village	De Kalb Pike and Township Line Road	72,000 sq. ft.	Whitpain
Alcar Restaurants	west side US 202 north of PA 73	restaurant 54,600 sq. ft.	Whitpain
Gwynedd Estates	west side US 202 south of Hancock Road	residential 10 single family	Lower Gwynedd
Gwynedd Knoll	east side US 202 at Hancock Road	residential 100 single family	Lower Gwynedd
Gwynedd Pointe	Knapp Road west of US 202	residential	Montgomery
Gwynmont Farms east side US 202 south of Knapp Road		retail Mont <sub>s</sub>	
Gwynmont Farms	east side US 202 north residential of Gwynmont Drive 20 single family		Montgomery
Welsh Village	west side US 202 at 714 townh Gwymnont Drive and condo		Montgomery
Section 7			
Development Name	Location	Type	<u>Township</u>
Montgomery Mart	east side US 202 north of PA 309	retail 200,000 sq. ft.	Montgomery
Pine Crest	west side of US 202 north of "5 Points"	golf course and 274 townhouses 49 single family	Montgomery
Victoria Court	PA 309 between Us 202 and Richardson Road	72 townhouses	Montgomery
Woodbrook	west side US 202 north of Grays Lane	23 single family	Montgomery

Section 7 (con'd)			
Development Name	Location	Type	Township
Forest Trail	east side of US 202 at Grays Lane	62 single family	Montgomery
Victoria Wood	Grays Lane between US 202 and Upper State Rd	25 single family	Montgomery
Canterbury Three	Grays Lane between US 202 and Upper State Rd	94 single family	Montgomery
Stone Ridge	Grays Lane at 185 single Family M Upper State Road		Montgomery
Montgomery Hill	west side Upper State Rd north of Horsham Road	25 single family	Montgomery
Wethersfield	west side Upper State Rd south of County Line Rd	157 townhouses	Montgomery
Fox Hollow	east side of Richardson Road	23 single family	
New Alignment			
Development Name	Location	Type	Township
Montgomery Ridge	east side Upper State Rd at Horsham Road	75 single family	Montgomery
Westgate	east side Upper State Rd south of Grays Lane	242 duplexes	Montgomery
Zitin Tract	east side Upper State Rd south of County Line Rd	30 single family	Montgomery
Montgomery Green	west side Stump Road north of Horsham Road	275 townhouses	Montgomery
Ridings of Montgomery	east side Stump Road	33 single family	Montgomery
Valley View	west side of new alignment	single family	Doylestown
Doylestown Crossing	Almshouse Road west of new alignment	98 single family	Doylestown
Doylestown Lea	east of new alignment	100 single family	Doylestown

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Development Name	Location	Type	Township
Doylestown Knoll	Lower State Road east of new alignment	108 single family	Doylestown
Warrington Oaks	Bristol Road between Upper State Rd and Lower State Road	155 single family	Warrington
Lapp Tract	east side Upper State Road	49 single family 49 townhouses	Warrington
Rothrock Tract	west side Lower State Road	64 single family 64 townhouses	Warrington
Geyer Tract	north side PA 152	55 single family 55 townhouses	Warrington
Section 8			
Development Name	Location	Туре	Township
Hunter's Crossing	US 202 and Burnt House Road	residential 28 single family	
Buckingham Green	US 202	retail 10 acres/ 31 units	Buckingham
Adam's Ridge	US 202 at Mechanicsville Road		Buckingham
Tyson Tract	PA 263 south of US 202/ PA 263 junction	residential 7 single family	Buckingham
Buckingham Chase	US 202 at Mechanicsville Road	72 single family	Buckingham
Yorkshire Chase	US 202 at PA 313	residential 24 single family	Buckingham
Buckingham Knoll	US 202 at PA 413	residential 25 townhouses	Buckingham
Buckingham Shopping Center	US 202 at PA 263	retail/ residential 15 acres 24 apartments	Buckingham

# Section 8 con'd

Development Name	Location	<u>Type</u>	<u>Township</u>
Solebury Farms	US 202	residential 200 dwelling units	Solebury
Fox Briar	PA 263 at Street Road	commercial	Solebury
Estates at Honey Hollow	Aquetong Road between PA 263 and US 202	30 single family	Solebury
Village II		residential 80 acres	New Hope Borough
Union Camp		commercial 14 acres	New Hope Borough

# Appendix III: Delaware Valley Regional Planning Commission Planning Studies Conducted in the US 202 Corridor

# Year Title

- 1990 US 202 Expressway Traffic Impact Study (Matlack Street Paoli Interchange)
  - discusses impacts of future traffic on US 202 between West Chester and Paoli
- 1990 Western Delaware County Transit Alternatives
  - examines transportation alternatives for communities in Western Delaware County
- 1990 Painters Crossroads Growth Area Access Study
  - study of existing conditions, future conditions, and transportation issues in the US 202/US
     1 area
- 1989 Greater Valley Forge TMA Travel Demand Management Issues and Program Identification
  - identifies transportation issues and potential programs to reduce traffic congestion in the King of Prussia area. Includes portion of Route 202 between the Chesterbrook interchange and the Upper Merion/Bridgeport boundary
- 1989 US 202: Norristown to Montgonmery Township
  - examines the feasibility of widening Route 202 between Norristown and Route 63 in Montgomery Township, Montgomery County
- 1989 US 202: Montgomeryville to Doylestown
  - report recommends new alignment for Route 202 in portions of Bucks and Montgomery Counties
- 1989 Travel Demand Analysis for US 202 Widening: King of Prussia to Exton Bypass
  - report presents results of traffic study conducted to determine impacts of additional traffic between the Paoli Interchange and the I-76 Interchange in Upper Merion Township
- 1988 US 202 Traffic Improvement Study (Delaware State Line to West Chester Bypass
  - an alternatives analysis comparing a four versus six lane roadway between the Delaware state line using forecasted year 2008 volumes

# Appendix IV: US 202 Montgomeryville to Doylestown

The following pages are excerpts from the above report, published by DVRPC in July 1989.

### Purpose of the DVRPC study

The purpose of this study was to determine ways to decrease traffic congestion in the US 202 Corridor in Montgomery, Warrington and Doylestown Townships. Specifically, the study sought to determine if it is still feasible to build a new road between Montgomeryville and Doylestown. The study was funded by the United States Department of Transportation and Pennsylvania Department of Transportation (PennDOT) and the counties of Montgomery and Bucks.

Figure I in the Regional Overview Study indicates the location of the alignment. The right-of-way is also shown in more detail on aerial photographs and maps found in Section 3.2 of the report <u>US 202</u> Montgomeryville to Doylestown.

The recommended right-of-way will depart from the present US 202 at a point just south of the intersection with Knapp Road. It will then bisect the "Witchwood Tract" and cross PA 309 at a point approximately 1500' south of the intersection of Upper State Road. The alignment then crosses undeveloped land between Bethlehem Pike and Horsham Road in a straight line meeting Horsham Road opposite land which has been previously acquired by Montgomery Township.

North of Horsham Road nearly all of the right-of-way has been acquired by the township, although a portion of the acquired right-of-way adjacent to County Line Road will not be able to be used. The path of the road will need to swing to the east in order to avoid St. John Neumann Cemetery in Warrington Township.

The project will enter Warrington Township just to the east of the cemetery and will run parallel to Stump Road. Near Detweiler Road, the right-of-way turns northward then crosses Limekiln Pike near the curve just south of Upper State Road. The road then crosses Pickertown Road about 700' north of Stump Road and Bristol Road 1000' north of Stump. At this point, the road begins to curve to the east in order to avoid bisecting the Delaware Valley College's model farm

The road crosses Almshouse Road just north of Quail Call Drive and passes between the house on the model farm and Glengarry Farm, a private residence, which are both historic properties. The alignment then crosses Lower State Road about 900' south of the intersection with Wells Road, then Wells Road about 1400' east of the same intersection, curving into the alignment of the built section of US 202 at the interchange with PA 611.

### **Intersections**

The right-of-way will cross several existing and proposed roads. Under the assumption of an arterial road each cross road may be an at-grade intersection. However, future analysis may indicate the need for grade separation or interchanges at one or more of the crossroads. From south to north, the roads are:

- (Extension of) Knapp Road
- Internal circulation road on the "Witchwood Tract"
- PA 309 (Bethlehem Pike)
- Internal circulation road on the "General Hancock Farm"
- PA 463 (Horsham Road)
- County Line Road
- Limekiln Pike
- Pickertown Road
- Bristol Road
- Almshouse Road
- Lower State Road
- Wells Road

No conclusions have been made regarding the location of interchanges if the road were to be built as a freeway.

### **Environmental issues**

This alignment requires that several small streams and adjacent wetlands and wet soils be crossed. Although small areas of prime agricultural land and wooded parcels would also need to be taken, no large areas of such lands would be bisected. The crossing of Neshaminy Creek represents the single most important environmental issue in designing this road.

#### Historic sites

Several historic sites in Montgomery and Doylestown townships lie close to the proposed right-of-way. Again, sensitive design can use this situation to advantage, allowing the buildings to be seen without adversely affecting the use of the site.

### Upgrading present US 202 studied

US 202 was described and opportunities for improving it were observed. In summary, the chief objections to upgrading US 202 are these:

- Present 202 encounters four turns at intersections or interchanges.
- Present 202 requires negotiating several congested intersections which cause significant delay. The most prominent of these being Bethlehem/Cowpath/Doylestown/ Horsham and Limekiln (south)/Butler (202)/Limekiln (north).
- Widening of US 202 is problematic is several areas, particularly in the boroughs of Chalfont and New Britain.
- Traffic levels approach and even exceed the capacity of the highway, especially on Bethlehem Pike and in Chalfont. Through traffic on Bethlehem Pike will be subject to delays caused by the congestion of shopping center traffic. Extensions of Bristol Road and Limekiln Pike could eliminate excess traffic in Chalfont, but these improvements are also expensive and problematic.
- The adjacent residential neighborhoods on and

near present US 202 would suffer from the intrusion of a higher capacity improvement.

### Parallel alternative routes

Some of the traffic which might naturally take US 202 is currently diverted to parallel roads which are less congested. Upper State Road is a continuation of DeKalb north of Bethlehem Pike and merges again with US 202 near Delaware Valley College. (The northernmost block of this road is called Shady Retreat.) AADT ranges from just under 9,000 south of Bristol Road to just over 4,000 north of This road is largely residential, is Almshouse. narrow, has no shoulders, and has problems of both horizontal and vertical curves, especially in the section just south of Bristol Road. Upgrading to serve as a new US 202, although attractive because of its direct alignment, would require severe disruption to the residents, both during construction and upon completion.

Lower State Road, although built to higher standards and surrounded by fewer residences, is out of the way and would require some new right-of-way to link it to DeKalb Pike. Alternatively, US 202 could be redesignated to following existing roads to Lower State, but such an arrangement would require more turns and greater total mileage than the present route. Portions of Lower State are now residential and reconstruction would cause the same kind of disruption as use of Upper State.

### Feasibility of a new route

The opportunity to build a replacement highway does exist. In Montgomery Township a large part of the 1968 "Orange Route" has been acquired from developers by the Township. The remaining land required is now vacant and much of it lies in two large parcels in an area designated as "town center" in the municipal master plan. This location creates an opportunity to negotiate with the owners of the land a plan which incorporates a right-of-way for new US 202.

In Bucks County, considerable land remains vacant,

including much of the alignment of the 1968 "Orange Route". However, no viable route exists which will not require the taking of at least a few improved properties. This situation is changing rapidly and the opportunity to build a new road at reasonable cost will disappear unless action is taken to preserve a corridor. The opening of the St. John Neumann Cemetery several years ago prevents the use of the 1968 alignment in the vicinity of County Line Road.

### **Future traffic levels**

As a part of this study and in a previous study undertaken in 1984, DVRPC has examined the impact of future development on traffic levels in the corridor. These studies have been based upon various assumptions of growth in jobs and residents. They have also made assumptions about what other highway improvements will be built. These differing assumptions have meant that no single set of consistent projections have emerged. Nevertheless, in sum the investigations have prepared DVRPC to state some conclusions:

- [1] Without an increase in capacity in the corridor, traffic will continue to increase to highly congested levels on parallel area highways, including Route 202, Upper State and Lower State Roads.
- [2] The additional traffic is sufficient to justify a new road on new right-of-way. Simulations of future conditions suggest that traffic volumes could reach 40,000 vehicles a day
- [3] Although it may be possible to build the additional capacity into the existing roads, the physical improvements such as widening and the high traffic levels on these roads would change their character to the loss of the community. Furthermore, speeds on these roads would be less than on a new road and the safety would also be inferior.
- [4] Traffic on these parallel roads may eventually return to today's levels, however, even with a new road, because of increases in housing and jobs in the area. The "through-trip" function of the road will decrease but the "local service" function will increase. Improvements on existing area roadways

will continue to be needed after any new road is constructed.

### Type of recommended highway

In the early 1970's, PennDOT commissioned engineering drawings for a new US 202 freeway in this corridor. The need for a freeway was confirmed in a traffic analysis completed by DVRPC in 1984, although this study assumed continuation of the road at the south end to connect with the US 309 freeway. There are, however, several reasons why this new road might better be planned as a controlled access arterial roadway:

- [1] PennDOT has limited resources in the foreseeable future. An arterial roadway will be much less expensive than a freeway and so is more likely to be funded than a freeway.
- [2] An arterial road will be more useful for short trips, in that its points of access will be more convenient. In this way, it should offer greater relief for existing roads, and therefore have greater utility to corridor residents.
- [3] Similarly, the lower speeds associated with an arterial road will make it a less attractive alternative to drivers who currently use more distant roads. A DVRPC analysis showed that a freeway alternative would draw trips away from parallel roads as far away as Old York Road (PA 263) and Souderton Road (PA 113).
- [4] Also, an arterial road, because it will do less to enhance the accessibility to the area, may have less tendency to induce development than a freeway would. Warrington's stated policy of discouraging development in the northern portion of the township should be easier to carry out.
- [5] An arterial roadway can be constructed with limited access so that it can be reached from intersecting roads only and not from driveways of adjacent properties. If care is taken in its design and control of access, the new road can offer the driver both speed and safety.

[6] Montgomery Township has acquired a significant portion of the right-of-way for the new road which reverts to the donor if construction is not started in the near future. The ability to offer this significant local contribution makes funding more likely and a less costly and less intrusive design of an arterial roadway can be made ready for construction sooner.

[7] An arterial roadway, with its more frequent entry points is less likely to cause undesirable congestion on access roads. Freeway interchanges, on the other hand, are likely to place very large demands on the intersecting roads.

For these reasons, DVRPC recommends that the road be conceived of as a controlled-access arterial highway. It is recommended that a cross section of 300' be assumed. This width has been used in the Montgomery Township acquisitions and, if possible, should be maintained as a minimum throughout the length of the road. The reserved alignment should have characteristics which could accommodate a freeway if the environmental impact statement should determine that the road should be built with grade-separated interchanges.

### Rationale for the alignment

Having chosen the option of building a new road on new right-of-way, DVRPC addressed the study to the question of an alignment for the new road. In Montgomery Township, the existence of an already acquired right-of-way suggested that no other route be examined in detail.

In Warrington Township the intervening construction of St. John Neumann Cemetery at Upper State and County Line roads presented the problem of how best to pass around the cemetery. A comparison was made of skirting the cemetery to the north and to the south. The southern route appeared superior because fewer properties would be required and fewer streets would be crossed. In the center of the township comparison was made between [1] a direct route passing parallel to and south of Stump Road between Pickertown and Bristol, and [2] utilizing as much as possible of the "Orange Route" selected in 1968. In terms of environmental impact and cost of

acquisition, it appeared the two routes were equal. The Orange Route was slightly longer. On the other hand, to the extent that the 1968 alignment has been assumed in land pricing and development over the past two decades, it appeared fairer to recommend the original route.

In Doylestown Township, a revision was made in the 1968 alignment in order to preserve the integrity of the model farm operated by the Delaware Valley College. This adjustment caused lesser revisions to be made to the alignment to the north and south of the college. Both the original alignment and the modified alignment designed to avoid the farm would require passing close to or taking some houses built in last few years.

The selection of the recommended alignment was based upon several factors. The routes studied were overlaid on the maps prepared for this study. Routes were favored which minimized the lineal feet of crossings of environmentally sensitive lands. A hierarchy of importance was applied to the environmental features, giving greatest attention to a composite of wetlands and 100-year flood plains. Next in importance were soils with high water table, then woodlands which are greater than ten acres and finally prime agricultural soils.

In addition, the net length of the road was considered on the assumption that land and construction costs would be proportional. The relative value of improved properties which would need to taken were also considered, the value of the buildings being assigned to one of four categories.

Also considered was the proximity of valued manmade features which benefit the public. Aside from the cemetery and college mentioned above, the only other cultural features impacted are several historic houses. In three instances, it is necessary to pass close to the structures. Sensitive handling is required in the design of the highway in these areas.

Finally, the wishes of the communities, as expressed by the supervisors of each, were considered in the selection of an alignment.

# Objectives for the selected alignment

The alignment described in the report represents one of many possible paths the new Route 202 might take. It is recommended that this alignment be assumed to be the final one pending completion of the environmental impact statement. The alignment is one which achieves several objectives, among which are:

- [1] The route uses most of the land already acquired for the purpose by Montgomery Township.
- [2] The route does not interfere with the operations of two large institutions near which it must pass (St. John Neumann Cemetery and Delaware Valley College).
- [3] It appears to minimize the numbers of houses and businesses which will be required.
- [4] It appears to minimize the impact upon natural and cultural features in the corridor.
- [5] The alignment is one which the affected municipalities agree to protect until such time as it is required.

### **Opportunities**

The construction of a new road on new right-of-way offers a number of opportunities for the townships affected to shape the character of the corridor. Adoption of a special overlay zoning district in the corridor of the highway can assure that aspects of local master plans are implemented and that safety and aesthetic qualities are included in the design of adjacent developments.

The impact of development which may be induced by the new road might be blunted by early adoption of traffic mitigation ordinances in the municipalities. Begun in advance of any development, the ordinances may be successful in either deflecting unwanted development or limiting the impacts by maximizing the use of ridesharing and transit.

The 300' right-of-way can provide ample land to

accomplish other objectives, such as additional recreational facilities. Trail activities, such as jogging and bicycling are now popular and appear to be enduring. Acquisition of a new right-of-way presents an opportunity to build trails which can benefit residents. Trails have been incorporated into portions of the Blue Route in Delaware County. Especially in Warrington and Doylestown townships, recreational facilities are remote from residents living close to the proposed road.

A broad right-of-way can also serve as a buffer to current and future development, an advantage to the driver who sees a natural and rural environment, and to residents who will be somewhat protected from the noise and activity of the road. Where noise barriers might be indicated, they can be incorporated into a natural buffer if adequate space is reserved.

Aesthetic elements can be introduced to make the experience of travelling this road unique and to leave with drivers a favorable impression of the municipalities through which it passes. Historic features which can be seen from the road might be accented. Municipalities may also wish to locate public facilities adjacent to the new road. It should be noted, however, that costly additional features benefitting residents may require local funding.

The alignment includes a number of horizontal and vertical curves which can provide a stimulating driving experience. Of particular interest is the descent from the road's high point at its crossing of Limekiln Pike to the bridge over the Neshaminy Creek. The alignment provides a vista of Doylestown in the distance as well as the nearer Neshaminy ravine.

## Conclusion

The Commission staff has concluded that an additional roadway on a new right-of-way is essential to adequately carry projected traffic without causing major disruption to current residents. Furthermore, if action is begun soon, it is feasible to build this new road without extraordinary cost, relocation of businesses and residences, and disturbance of natural and historic features. An alignment which, on the basis of a preliminary review, appears to meet the

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objectives for both traffic reduction and minimization of adverse impact has been selected.  $\hfill\Box$ 

# **Appendix V:**US 202 Norristown to Montgomeryville

The following pages are excerpts from the above report, published by DVRPC in November 1989.

#### Introduction

The objective of this study was to examine the feasibility of widening US 202 between Norristown and Montgomery Township and to recommend lane configurations and right-of-way needs. The study's conclusions can be used by PennDOT, Montgomery County, and the townships to [1] reach a consensus on the scope of the improvements, [2] reserve right-of-way, and [3] program the widening in PennDOT's Twelve Year Plan. It can also be used to coordinate developer-financed improvements.

Sponsored by PennDOT and Montgomery County, the study focuses on US 202 between Johnson Highway and PA 309. The nine-mile section of highway passes through East Norriton, Whitpain, Lower Gwynedd, Upper Gwynedd, and Montgomery townships. It is part of a larger effort which includes a companion study examining the feasibility of constructing a new highway between PA 309 and the Doylestown Bypass in Bucks County.

US 202 corridor has become the spine of much of the region's recent commercial, office and residential growth. The 59-mile corridor between the states of Delaware and New Jersey is a vital link for business and industry, and for the local travel needs of the communities along the corridor. The corridor is still experiencing rapid development in the less-developed communities. Recognizing the importance of US 202 to the economy of the Delaware Valley and to the Commonwealth of Pennsylvania, PennDOT subdivided the corridor into eight sections and is funding planning and engineering studies for each section.

The approach used by this study was to identify the maximum capacity improvement which can be constructed given existing development abutting the roadway. The need for widening US 202 is obvious and is readily documented in this report. Future

travel demand was not projected because road improvements necessary to carry that demand are precluded by existing development. The feasibility of constructing US 202 on a new alignment was evaluated in compliance with federal funding requirements that PennDOT must demonstrate a new alignment is not feasible. Again, existing development in a three-mile corridor surrounding US 202 precludes this option.

### Physical characteristics

In general, the right-of-way is 50 feet wide between Johnson Highway and Skippack Pike, 40 feet wide between Skippack Pike and Wissahickon Creek, 80 feet wide between Wissahickon Creek and Sumneytown Pike, and 40 feet wide between Sumneytown Pike and PA 309.

General roadway widths for US 202 are summarized below. These widths do not detail localized widenings or slight variations in the shoulder width shown in Figure 4.

- Johnson Highway to Colonial Drive 24 ft. travelway, 0-4 ft. shoulders
- Colonial Drive to Germantown Pike-44-74 ft. travelway, no shoulder
- Germantown Pike to Adams Avenue-24 ft. travelway, 4 ft. shoulders
- Adams Avenue to Yost Road 48 ft. travelway, no shoulder
- Yost Road to Wissahickon Creek 24 ft. travelway, 4 ft. shoulders
- Wissahickon Creek to Sumneytown Pike-52 ft. travelway, 8 ft. shoulders
- Sumneytown Pike to PA 309 24 ft. travelway, 3 ft. shoulders

US 202 is generally a two-lane roadway, one lane in each direction. A three-lane cross section, two through lanes and a continuous two-way center turn lane, currently exists in Whitpain Township between the East Norriton Township corporate line and Yost Road. A four-lane section, two travel lanes in each direction, is located in Lower Gwynedd Township between Wissahickon Creek and Sumneytown Pike.

Between Johnson Highway and PA 309 there are currently 14 signalized intersections. Three of these traffic signals serve shopping centers or malls, specifically Northtowne Plaza and Montgomery Mall. A traffic signal is planned for Hancock Road. Similarly, a traffic signal at Montgomery County Community College is proposed as part of the Ballenrose development.

Left turn lanes on US 202 currently exist at all signalized intersections and most major non-signalized intersections. At Skippack Pike, US 202 is temporarily widened to two through lanes in each direction to increase the intersection capacity. All major signalized cross-roads have left turn lanes on their approaches.

#### **Traffic characteristics**

The AADT along US 202 ranges from 14,700 vehicles per day at Knapp Road to 25,600 vehicles per day between Swede Road and Skippack Pike. For the majority of US 202, the AADT is approximately 20,000-22,000 vehicles per day. In the southern portion of the corridor, Swede Road/Markley Street siphons several thousand vehicles off of US 202. Among the intersecting roadways, Germantown Pike, with an AADT of 22,000-24,000 vehicles, is the heaviest traveled cross road. Other major cross roads are Skippack Pike with 17,500-20,500 vehicles per day, Welsh Road with 16,000 vehicles per day, and Sumneytown Pike with 14,000-18,000 vehicles per day.

The posted speed limits on US 202 are as follows:

Johnson Highway to Skippack Pike- 40 MPH Skippack Pike to Grasshopper Lane- 45 MPH Grasshopper Ln to Sumneytown Pk- 55 MPH Sumneytown Pike to Knapp Road- 45 MPH Knapp Road to PA 309- 40 MPH

### Recommendations

The improvements represent a balance between traffic demand and the ability and acceptability of widening the road with minimal impact on adjoining properties and with minimal opposition from property owners. The recommendations consist of three broad categories: roadway cross section and right-of-way requirements, proposed widening and alignment, and intersection improvements.

### Feasibility of New Alignment For US 202

As part of the study effort, PennDOT requested that the feasibility of constructing a new alignment for US 202 be addressed. An investigation of development patterns and the cultural and environmental features of a three mile corridor surrounding US 202 was conducted. In summary, existing development was identified and classified by land use category. Similarly, future development was also identified and categorized. Among the cultural features identified were utilities, schools, post offices, municipal buildings, parks, and historic buildings. Environmental features identified included streams and wetlands. The results of this analysis are not documented in this report other than for the immediate corridor surrounding US 202. Details of the analysis can be obtained by contacting DVRPC.

Results of the analysis clearly indicate the extensive development in the corridor precludes a new alignment for US 202. The corridor south of the Pennsylvania Turnpike Northeast Extension is almost fully developed. Large clusters of undeveloped land are scattered throughout the central and northern portions of the corridor. However, existing development obstructs the linking of clusters into a usable right of way. The undeveloped tracts tend to be concentrated around North Wales Road and Blue Bell Road, well away from US 202, with little opportunity for a direct connection. Many of the clusters surround Wissahickon Creek and Trewellyn Creek, further reducing their viability.

# Proposed Cross Sections and Right-of-Way Requirements

The proposed cross sections and corresponding rightof-way widths are a function of existing land use patterns and PennDOT design standards. Three basic cross sections are recommended:

### Five-Lane Cross Section

Frontage along US 202 is primarily strip development characterized by numerous driveways with continuous low-volume left turn movements. Lateral clearance between the existing roadway and buildings and/or parking lots is restricted. Posted speed limits in these segments are generally 35 or 40 MPH. A five-lane cross section (82 ft. right-of-way) is recommended, consisting of two through lanes (12 ft. inside lane and 13 ft. curb lane) in each direction, a continuous twoway left turn lane (14 ft. wide), curbing, and a clear area/sidewalk area (8 ft. wide). Municipalities have the option to construct sidewalks if they wish to provide access for pedestrians. Generally, the 8 ft. clear area will be adequate to match existing grades since most of the frontage along US 202 is already developed and fairly level. A center turn lane width of 14 ft. is used instead of a smaller 12 ft. wide lane to separate turning traffic from through vehicles.

### Four-Lane Cross Section

In segments of US 202 where roadside access is more restricted and vehicles travel at a higher speed, a four-lane cross section is recommended. The recommended 70 ft. right-of-way consists of two 12 ft. travel lanes in each direction, 6 ft. shoulders, and a 5 ft. clear area.

### Four-Lane Cross Section With Median

The present four-lane section between Wissahickon Creek and Sumneytown Pike is a high-level roadway with limited driveways, some form of medial treatment, full-width shoulders, and a posted speed limit of 55 MPH. To employ a cross section of lesser standards would degrade the quality of the roadway. The recommended 80 ft. right-of-way consists of a 12 ft. inner and 11 ft. outer travel lane in each direction, a concrete median barrier, 2 ft. inner shoulders, 8 ft. outer shoulders and a 6 ft. clear The recommended right-of-way essentially retains the existing cross section, slightly reducing lane widths in order to construct a median barrier. Since the roadway is composed of reinforced concrete and the shoulders are composed of bituminous material, the effort necessary to maintain 12 ft. lanes is not cost-effective.

#### **US 202 Recommendations**

These recommendations pertain to the proposed alignment and right-of-way necessary for the widening of US 202. (The recommendations are presented graphically on a series of 1" = 200 ft. aerial photos contained in the appendix of the report.)

Where existing structures obstruct the widening, the alignment was altered when feasible, to minimize the impact on existing land uses. At Township Line Road, a less desirable right-of-way and cross section width was used to avoid taking the numerous residences lining US 202.

Proposed alignment, right-of-way, and cartway widths recommended in this report are conceptual and are intended to test the feasibility of widening US 202 and to develop a concensus among property owners and local officials on upgrading the roadway. The analysis, while consistent with engineering standards, does not constitute a design and is therefore subject to revision by PennDOT during preliminary engineering, right-of-way acquisition, and final design.

An analysis was conducted to quantify the impact of the proposed right-of-way on existing land uses. The analysis was subjective because of the wide range in quality of residences and the types of businesses.

The land uses were divided into two categories, residential and non-residential. Some differentiation was made to the value of the property from a monetary perspective. Each land use was graded on the basis of minimal impact, moderate impact or taking. Each rating is defined below.

Minimal Impact - Existing land use will be minimally affected. Road widening will necessitate the construction of new driveway aprons, new curbing, sign relocation, and other minor improvements. Taking of only a few feet from a property with a substantial set-back will be necessary. Any property that abuts US 202 will bear, by definition, at least a minimal impact.

Moderate Impact - For residential properties, the partial loss of a lawn and/or the removal of shrubbery will result in the residences being situated closer to the roadway. For non-residential properties, right-of-way acquisition will entail relocation of driveways, replacement and/or relocation of parking spaces on the remainder of the property, loss of storage space, and other similar impacts.

<u>Taking</u> - This will occur when a structure needs to be demolished or when it is not possible to reconfigure the property to provide adequate parking or storage.

From a review of the aerial photographs, the results of the analysis are summarized below:

### Residential Land Uses

Minimal Impact- 105 properties Moderate Impact- 37 properties Taking- 12 properties

### Non-Residential Land Uses

Minimal Impact- 71 properties Moderate Impact- 35 properties Taking- 11 properties

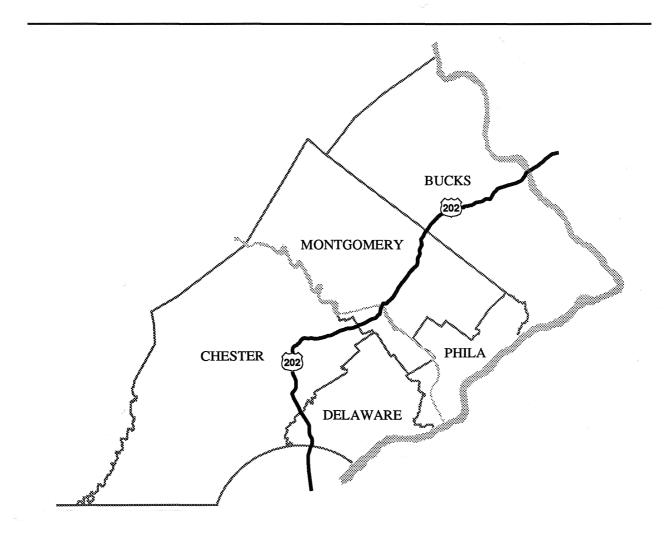
Many of the residential takings are currently vacant or are rental properties, thus they are marginal in nature. A frequent moderate impact on residential properties is the loss of shrubbery which serves as a buffer from US 202. Many of the non-residential properties to be taken are located adjacent to US 202, also marginal in nature. A majority of non-residential properties facing moderate impacts can be classified as either former residences converted into offices or gas stations/auto parts stores.

## **Intersection Recommendations**

Widening US 202 to four or five lanes will add a second through lane at many intersections; other intersections will gain a left turn lane. At intersections where the road is locally widened to two through lanes in each direction (for example at

Skippack Pike), the second through lane is usually under-utilized by drivers; widening US 202 will permit full utilization of the second lane.

# US 202 REGIONAL OVERVIEW STATEMENT



DELAWARE VALLEY REGIONAL PLANNING COMMISSION THE BOURSE BUILDING 21 SOUTH 5TH STREET PHILADELPHIA, PA 19106

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