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Delaware Valley Regional Planning Commission

SEPTEMBER 2004



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Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency that provides continuing, comprehensive and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties, as well as the City of Philadelphia, in Pennsylvania; and Burlington, Camden, Gloucester and Mercer counties in New Jersey. DVRPC provides technical assistance and services; conducts high priority studies that respond to the requests and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues; determines and meets the needs of the private sector; and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the Commission.



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

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

TABLE OF CONTENTS

EXE	CUTIVE SUMMARY	1
1.	INTRODUCTION Study Purpose and Background Planning Process	3 3
2.	EXISTING CONDITIONS. Study Area. Demographics. Land Use. Roadway Features Inventory. Traffic Volumes. Accident Data. Daily Trip Patterns.	5 5 6 9 10 12
3.	EXISTING PROBLEMS WITH RECOMMENDATIONS Turn Lanes and Signals Access Controls Sight Distance Signage Summary	23 23 29 33 34 35
APP	PENDICES Appendix A- Existing Problem Locations	

i

Appendix A- Existing Problem Locations Appendix B- Chester County Planning Commission Access Management Schematics

Appendix C- Access Control Problem Locations

LIST OF FIGURES

1.	REGIONAL SETTING	7
2.	2000 LAND USE	8
3.	TRAFFIC VOLUMES	11
4.	2025 TOTAL DAILY VEHICLE TRIP DISTRIBUTION FROM:	
	a. North Coventryb. East Coventryc. East Vincentd. East Pikeland	15 16 17 18
5.	EXISTING PROBLEMS (Figures 5A and 5B)	25
6.	RECOMMENDED TRAFFIC SIGNALS AND TURN LANES (Figures 6A and 6B)	27
7.	ACCESS CONTROLS (Figures 7A and 7B)	31

LIST OF TABLES

1.	STUDY AREA DEMOGRAPHIC CHARACTERISTICS: 1990 AND 2000	5
2.	PA 724 PEAK HOUR TRAFFIC LEVEL OF SERVICE ANALYSIS	9
3.	2025 DAILY TRIP DISTRIBUTION BY MUNICIPALITY	14
4.	TRIP DISTRIBUTION FROM:	
	a. North Coventry	21
	b. East Coventry	21
	c. East Vincent	22
	d. East Pikeland	22
5.	RECOMMENDED TURN LANE AND/OR TRAFFIC SIGNAL	
	PLACEMENT LOCATIONS	24
6.	ACCESS REGULATIONS FOR:	
	a. Low Volume Driveways	33
	b. Medium Volume Driveways.	33

EXECUTIVE SUMMARY

Development pressures and changes in population and employment patterns in this region of Chester County have increased congestion and safety concerns along portions of PA 724. The main goals of this report are to identify operational and safety deficiencies on this 11.8-mile corridor and develop common themes for improvements that are low cost and responsive to inter-municipal cooperation and coordination.

Examination of the corridor found common safety and traffic operation issues centered on:

- Congestion at key intersections on PA 724 due to many crossroads used as cut throughs to regional employment centers and other major routes.
- Physical deficiencies such as insufficient turning radii or sight distance problems.
- Insufficient access controls.
- Miscellaneous issues related to deficient signage, substandard pavement, and overgrown roadside vegetation.

A total of 19 intersections and 3 segments of PA 724 were identified as requiring mitigation and/or further study for traffic congestion and/or physical deficiencies.

A PA 724 task force was put together to identify problems and help recommend measures to mitigate them. The task force included representatives from:

- North Coventry Township
- East Coventry Township
- East Vincent Township
- East Pikeland Township
- Chester County Planning Commission
- Delaware Valley Regional Planning Commission (DVRPC)
- Tri-County Area Chamber of Commerce (TCACC)

The task force unanimously agreed that major widening of the corridor to four or five lanes should be avoided due to the expense and lack of local support. Instead, recommended improvements included adding turn lanes, new traffic signals, upgrading and increasing the number of street name and advance street name signs, and improving the maintenance of roadside vegetation and placement of street furniture.

In addition, PA 724 was examined for driveways in gross violation of PennDOT access code. Twenty properties were found to have driveways in gross violation of these codes. This study recommends the enforcement of current standards when vacant properties are redeveloped, or existing businesses substantially change land use.

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1. INTRODUCTION

STUDY PURPOSE AND BACKGROUND

Improvements to PA 724 have not kept pace with increased land development and continuing population growth in this region of Chester County. Congestion at key intersections on PA 724 has forced many motorists onto alternative roads ill equipped to carry increased traffic. This has lead to safety and capacity related problems in the corridor and surrounding road network.

Chester County's Transportation Improvements Inventory (TII) for 2003 put cost estimates for all county transit, highway and bridge needs at approximately \$6.2 billion. Limited public funds for major road improvements at all levels of government have curtailed their ability to respond appropriately to many of the current and future problems facing arterial corridors like PA 724. As such, better planning for and management of the existing facility is an important step towards finding suitable methods to mitigate these problems. Specific goals of this study include:

- Identifying low cost solutions to improve operational and safety concerns on the corridor.
- Develop common theme for improvements to PA 724 to better streamline inter-municipal planning and road management activities.
- Building communication and consensus between the municipalities bordering the roadway.

PLANNING PROCESS

A PA 724 task force, formed in July 2002, guided the study. The following municipalities and regional organizations were represented on the task force:

- North Coventry Township
- East Coventry Township
- East Vincent Township
- East Pikeland Township
- Chester County Planning Commission
- Delaware Valley Regional Planning Commission (DVRPC)
- Tri-County Area Chamber of Commerce (TCACC)

Over several meetings held at the TCACC offices in Pottstown between 2002 and 2003, the task force worked to identify existing problems and areas for further study. Some of the problems encountered included:

- 1. Physical deficiencies (sight distance, turning radii).
- 2. Congestion at key intersections with local roads used as cut throughs.
- 3. Insufficient access controls.

4. Miscellaneous issues related to deficient signage, substandard pavement, and overgrown roadside vegetation.

The task force helped to recommend and prioritize measures to alleviate problems identified on PA 724. Members unanimously agreed that no significant widening of the corridor should occur outside of limited operational improvements such as additional turn lanes or intersection realignments. Consequently, where feasible, use of existing shoulders on PA 724 for turn lanes was recommended as a low cost option with minimal impact to abutting properties. New traffic signals at certain intersections and better municipal coordination and enforcement of access controls were also recommended. In addition, the task force agreed that not every physical deficiency could or should be addressed. For example, any physical improvement to the PA 724 and Kiem Street intersection would result in severe impacts to existing land uses, outweighing any benefits that might result.

This report was prepared to provide a brief description of existing conditions on and around PA 724, the issues identified by the task force, and the resulting recommendations. This includes descriptions of the corridor, study area, land use, and current travel patterns. An overview of each identified problem is presented along with general recommendations for its' improvement.

4

2. EXISTING CONDITIONS

STUDY AREA

The segment of PA 724 under study extends 11.8 miles from the Berks County / North Coventry Township Line to its merge with PA 23 in East Pikeland Township. It runs east/west along the northern edge of North Coventry, East Coventry, East Vincent and East Pikeland Townships. The corridor's regional setting is depicted in Figure 1.

The municipalities bordering PA 724 offer a varying mix of rural, suburban and urban characteristics. Moving west to east through the study area, the atmosphere is rural/agricultural with pockets of suburban development. It becomes increasingly suburban and urban-like with denser commercial and residential development at the eastern end of the study area.

PA 724 facilitates access to several expressways and principal arterial highways in and around the study area. These routes include PA 23, PA 100, PA 113, US 422 and a number of Schuylkill River crossings. They provide access to the rest of central Chester County as well as several local and regional employment centers, which include:

- Pottstown
- Phoenixville central business district
- Great Valley
- Chesterbrook
- King of Prussia

DEMOGRAPHICS

The study area experienced a 9.3 percent increase in population between 1990 and 2000, a slower rate than Chester County as a whole (+15.2%). All four municipalities in the study increased in population except North Coventry, which experienced a 1.7 percent reduction.

TABLE 1: STU	DY AREA	DEMOGRA	PHIC CHAR	ACTERIST	ICS: 1990	and 2000
	Population	า		Employme	ent	
Municipality	1990	2000	% Change	1990	2000	% Change
North Coventry	7506	7381	-1.7	1187	2152	+81.3
East Coventry	4450	4566	+2.6	409	724	+77.0
East Vincent	4161	5493	+32	1284	1467	+14.3
East Pikeland	5825	6551	+12.5	950	1542	+62.3
Study Area	21,942	23,991	+9.3	3830	5885	+56.7
Chester County	376,396	433,501	+15.2	197,752	238,641	+20.7

(Sources: Population statistics from 1990 and 2000 US Census. Employment statistics for 1990 based on US Census. Employment statistics for 2000 based on *DVRPC 2000 Databank for Transportation Planning* forthcoming in July 2004.)

In contrast, employment in the study area grew at a faster rate, 56.7 percent, than the county at 20.7 percent. North Coventry and East Vincent Townships experienced employment figures almost doubling between 1990 and 2000 (see Table 1). Much of this growth can be attributed to the spread of development west from King of Prussia along the US 422 corridor.

LAND USE

Chester County's long-range comprehensive plan *Landscapes* recognizes the importance of the relationship between land use and the road system in promoting an efficient and safe environment critical to future development and economic activity. PA 724 is a significant corridor in *Landscapes*, traversing areas typically designated rural¹ in the western half of the corridor and suburban in its eastern half. It also connects to two urban centers located in Spring City and North Coventry.

Figure 2 illustrates DVRPC's Year 2000 information on land use conditions in the study area, which are characterized by light development densities. Agricultural, wooded tracts and single family detached residential land use forms dominate in the study area.

The majority of commercial, industrial and high-density residential land uses are located on or close to PA 724. PA 100 in North Coventry Township and PA 23 and PA 113 in East Pikeland Township are also sites of commercial and industrial activity.

ROADWAY FEATURES INVENTORY

An inventory of corridor features was carried out through field surveys to identify road geometry and existing problems.

PA 724 has one through lane in each direction and no median divider. Each lane is generally 11 to 11 ½ feet wide with shoulders ranging 1 to 8 feet. Turning lanes are located at:

- Westbound onto Laurelwood Road
- Eastbound and Westbound into the Coventry Mall
- Eastbound onto PA 100
- Eastbound onto US 422 Interchange
- Eastbound and Westbound onto Bridge Street

6

¹Rural landscapes include farms, farm related businesses, and villages, along with some scattered housing sites. Suburban landscapes include low to medium-density subdivisions and related shopping centers and employment centers. Urban centers serve as focal points of existing and future growth in Chester County communities. For example, historic population centers, which traditionally serve as focal points of employment, culture and commercial interest. Source: *"Landscapes: Managing Change in Chester County 1996-2020"* Comprehensive Plan Policy Element. Adopted 1996, Chester County Planning Commission.





The posted speed limit along the majority of PA 724 is 45 mph. There are 60 intersections in the corridor, seven of which are controlled by traffic signals. PA 724 is a through highway with stop sign controls on the minor streets. Additional information on all intersections included in the study can be found in Appendix A.

TRAFFIC VOLUMES

Figure 3 illustrates the Average Annual Daily Traffic (AADT) on PA 724 based on traffic counts performed by DVRPC between 1999 and 2003. Traffic flows vary between 6000 and 17,300 vehicles per day.

The lowest volumes are in the western portion of PA 724 between the Berks Township Line and Laurelwood Road. Near the Coventry Mall traffic volumes increase to 16,100, peaking at 17,300 vehicles per day east of the US 422 interchange. At the eastern end of the corridor approaching PA 23 traffic volumes are about 16,000 vehicles per day.

A generalized capacity analysis was performed to examine peak hour traffic on the basic road segments along PA 724. Guidelines and procedures in the Highway Capacity Manual² and Highway Capacity Software³ were used conduct analysis of PA 724.

The highway was divided in to seven segments (shown in Table 2) based on AADTs shown in Figure 3, road geometry and other factors that influence highway capacity (access points per mile, percent no passing, directional split, etc.) Analysis results show general level of service (LOS) D under peak hour conditions except between Laurelwood Road and the Berks County Line where it operates at LOS C.

TABLE 2: PA 724 PEAK HOUR TRAFFIC LO	OS ANALYSIS	
Road Segment	AADT	Level Of Service
Berks County Line to Laurelwood Road	6,000	С
Laurelwood Road to PA 100	16,100	D
PA 100 to Kennilworth Village	9,200	D
Kennilworth Village to US 422 Interchange	13,000	D
US 422 Interchange to Sanatoga Road	17,300	D
Sanatoga Road to Kolb Road	13,100	D
Kolb Road to PA 23	16,100	D

Source: DVRPC Average Annual Daily Traffic Counts 1999 to 2003

This analysis did not examine individual intersections, which could have an impact on the LOS results. However, since only a handful of intersections on PA

 ² Highway Capacity Manual – HCM 2000, Transportation Research Board, National Research Council, Washington, D.C., 2000.
 ³ Highway Capacity Software – Version 4.1, McTrans Center – University of Florida, Gainesville

³ Highway Capacity Software – Version 4.1, McTrans Center – University of Florida, Gainesville FI, Copyright 2000.

724 are signalized, the overall LOS D is generally indicative of peak hour traffic conditions in the corridor.

ACCIDENT DATA

Accident data functions as an important tool in identifying potential physical deficiencies and safety concerns. Records of traffic accidents on PA 724 were obtained from PennDOT's Accident Records Systems. Available records cover a six-year period between 1996 and 2001. All records obtained are for reportable accidents⁴ only.

A total of 384 accidents were recorded on PA 724 between 1996 and 2001:

<u>Year</u>	<u>Accidents</u>
1996	63
1997	63
1998	64
1999	57
2000	72
2001	65

Forty-nine percent of accidents on PA 724 are not associated with intersections and 54 percent occur at intersections. Most accidents occur during the day on dry road surface conditions, with the three leading types of accidents on PA 724 being:

Accident Description	# Of Accidents	Location of Highest Concentration
Angle	161	Road segment between Laurelwood Road
-		and South Hanover Street in North Coventry
		(28% of angle accidents)
Rear-end	111	Road segment between Bridge Street and
		Park Road in East Vincent (26% of rear-end accidents)
Hit fixed object	71	Road segment between US 422 interchange and North Coventry/East Coventry Township line (13% of hit fixed object accidents)

There are five road segments (listed below) on PA 724 where 25 accidents or more occurred between 1996 and 2001.

Road Segment	Accidents
Pennshurst Road to Park Road in East Vincent	39
Wells Road to Pigeon Creek in East Coventry	35
South Hanover Street to Bellwood Golf Course in North Coventry	28
Old Schuylkill / PA 724 to Pennhurst Road in East Vincent	28
South Kiem Street to Vaughn Road in North Coventry	26

⁴ Accidents are considered reportable in the Commonwealth of Pennsylvania if they result in an injury, a fatality, or require towing of a vehicle from the scene.



Over all, eight accidents resulted in fatalities and 216 involved injuries. The remaining accidents (160) were accidents involving property damage only. On average accidents occur at a rate of 1.21 per million vehicle miles traveled (MVMT). This is lower than the statewide reportable accident rate for this type of roadway (1.49 per MVMT⁵). Based on this average accident rate and the length of time over which these accidents occurred, no significant accident problem currently exists on PA 724.

DAILY TRIP PATTERNS

DVRPC's Year 2025 travel demand forecast model was analyzed to spotlight trends in daily trips from the PA 724 study area. The destination and number of trips from each municipality to the wider nine-county Delaware Valley region was examined. This included internal trips, that is, trips starting and ending in the same zone. For the purposes of this study these represent intra-municipal trips. Sixteen regional zones were created based on DVRPC's traffic analysis zones (TAZs), with many outlying municipalities and counties grouped into larger regional zones to better highlight trip trends. Zones 1-4 encompass the PA 724 study area and represent North Coventry, East Coventry, East Vincent and East Pikeland respectively.

Municipal Trip Distribution Patterns

Following are a series of maps and tables that provide detailed analyses of daily vehicle trips (DVT's) within the study area. Table 3 illustrates the municipal origins and destinations of these DVTs. Figures 4A to 4D are trip pattern maps that illustrate trip magnitude via line arrow width and color. The numbered arrowheads correspond to the destinations zones featured in Tables 4A to 4D. The actual number of trips is shown below or above the arrows with overall percent distribution of this number given in parentheses. Tables 4A to 4D show the actual number and percent distribution of total trips from each municipality in the study area to each destination zone.

Zone 1: North Coventry Township

Zone 1 is located in the western end of the PA 724 study area and is comprised entirely of North Coventry Township. US 422 runs east/west along the northern edge of the township and PA 100 runs north/south through the eastern portion of the township. Both corridors provide major region wide highway access. As can be seen from Table 4A and Figure 4A, the 2025 forecast shows a total of 25,182 DVTs originating from Zone 1. The greatest numbers of trips to any location are internal trips within North Coventry Township (31%).

Outside the study area, commuters leaving Zone 1 travel primarily to Zone 9 (Pottstown and the Pottsgroves) and Zone 10 (Berks County): 23.9 percent and 13.4 percent respectively. Within the study area, DVT's from Zone 1 to the other

⁵ PennDOT, "Crashes by Road Type" on Page 16, 2000 Pennsylvania Crash Facts and Statistics.

three townships are relatively low; in total they make up less than three percent of all trips.

Zone 2: East Coventry Township

Zone 2 is located in the western end study area and is comprised entirely of East Coventry Township. PA 23 briefly runs east/west through the very southern portion of the township. As shown in Table 4B and Figure 4B, the 2025 forecast shows a total of 10,892 DVTs originating from Zone 2. Internal trips constitute the greatest number of trips to any location (28.5% of all trips). Outside the study area, commuters leaving Zone 2 travel primarily to Zone 13 (Upper Merion, Tredyffrin, the Goshens, Willistown, and Whitelands) and Zone 9 (Pottstown and the Pottsgroves: 10.7% and 10% of all trips respectively). Within the study area, DVT's from Zone 2 to the other three townships makeup 8.5 percent of all trips.

Zone 3: East Vincent Township

Zone 3 is located in the eastern part of the study area and is comprised entirely of East Vincent Township. PA 23 runs east/west through the southern portion of the township. As seen in Table 4C and Figure 4C, the 2025 forecast shows a total of 17,140 DVTs originating from Zone 3. Internal trips constitute the greatest number of trips to any location (36.1% of all trips). Outside the study area, commuters leaving Zone 3 primarily travel to Zone 13 (Upper Merion, Tredyffrin, the Goshens, Willistown, and Whitelands: 11.6% of all trips). Within the study area, DVTs from Zone 3 to the other three townships makeup 7.2 percent of all trips.

Zone 4: East Pikeland Township

Zone 4 is located in the eastern part of the study area and is comprised entirely of East Pikeland Township. PA 23 runs east/west through the northern portion of the township and Route 113 runs south/southeast through the southern portion. Looking at Table 4D and Figure 4D, the 2025 forecast shows a total of 20,615 DVTs originating from Zone 4. Internal trips constitute the greatest number of trips to any location (31.2% of all trips). Outside the study area, commuters leaving Zone 4 travel primarily to Zone 13 (Upper Merion, Tredyffrin, the Goshens, Willistown, and Whitelands) and Zone 6 (Phoenixville Borough): 22.6 percent and 9.0 percent of all trips respectively. Within the study area, DVTs from Zone 4 to the other three townships are low making up 3.6 percent of all trips.

			Ori	gin	
		North Coventry	East Coventry	East Vincent	East Pikeland
	North Coventry	* 7794	343	224	85
	East Coventry	340	* 3105	471	128
	East Vincent	215	458	* 6190	537
	East Pikeland	89	130	556	* 6433
	Spring City	131	247	298	307
	Phoenixville	164	260	751	1865
	Upper Providence	286	270	617	635
Ę	Limerick & Royersford	714	891	918	380
natio	Pottsgroves & Pottstown	6011	1087	725	301
Desti	Berks County	3382	587	503	346
	West Vincent, South Coventry, East Nantmeal, Warwick	812	349	865	360
	West Pikeland, Charlestown, Schuylkill	113	148	410	1353
	Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands	1311	1170	1984	4666
	Rest of Montgomery County (Montco)	2212	965	1322	1451
	Rest of Chester County (Chesco)	875	501	760	885
	New Jersey, Delaware, Philadelphia & Bucks	733	381	546	883

TABLE 3: 2025 Daily Trip Distribution by Municipality

Source: DVRPC

*

Internal Trips









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In summary, analysis revealed one third of all trips generated within each municipality are internal -- the most numerous type of trip movement. Figures 4A and 4B illuminate the strong relationship between the western half of the corridor, Zone 1 (North Coventry), and to a lesser extent Zone 2 (East Coventry), to Berks County, Pottstown, Lower Pottsgrove and Upper Pottsgrove. These trip destinations require crossing the Schuylkill River, which makes the river crossings an important facet of the area's transportation system.

Moving east through Zone 3 (East Vincent) into Zone 4 (East Pikeland), patterns change to reveal an increasing proportion of trips destined for Phoenixville, Tredyffrin, East Whiteland and King of Prussia. The location of large employment centers within these areas is key to understanding these shifts in trip destinations.

Overall, this analysis shows that PA 724 is not used for long distance trips. By all indications, in its western half, the corridor functions as a cut through to Berks County and the Schuylkill River bridges heading into Montgomery County. In its eastern half, it allows entrance onto cut through roads, which provide access to employment centers located along US 30 and US 202.

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PA 724 Corridor Study

TABLE 4A: Trip Distribution From North Coventry.

Destination Municipality Crips 1 North Coventry 7794 2 East Coventry 7794 2 East Vincent 340 3 East Vincent 340 4 East Vincent 89 5 Spring City 131 7 Upper Providence 286 8 Limenick & Royerstord 714 10 Berks Country 3382 11 West Vincent, South Coventry, 812 3382 12 West Previoun, Whitelands 3131 13 Upper Merion, Tredyfrin, 113 113 14 Rest of Montco 215 15 Schwylkill 113 16 Pottsgroves & Pottstown 113 17 Berks Country 3382 13 Upper Merion, Tredyfrin, 113 113 14 Rest of Montco 2114 15 Rest of Charlestown, Whitelands 113 14 Rest of Charlestown, Whitelands 1311 15 Rest of Charlesco 2732 16 <td< th=""><th></th><th></th><th></th><th></th></td<>				
1 North Coventry 7794 2 East Coventry 340 3 East Vincent 215 3 East Vincent 215 4 East Pikeland 89 5 Spring City 131 6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 10 Berks Country 3382 11 West Vincent, South Coventry, 812 12 West Vincent, South Coventry, 812 13 Uopper Marwick 13 Uoper Merion, Tredyffrin, 113 13 Uoper Merion, Tredyffrin, 113 14 Rest of Montco 2712 15 Rest of Montco 2712 16 NJ, Delaware, Philly & Bucks 733	Destination Zones	Municipality	Trips Originating In Zone 1	Percent
Z East Coventry 340 2 East Coventry 340 3 East Vincent 215 4 East Pikeland 89 5 Spring City 131 6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, 812 12 West Vincent, South Coventry, 812 13 Upper Meriand, Charlestown, 113 13 Upper Merion, Tredyffrin, 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	Ŧ	North Coventry	7794	31.0%
Z East Vincent 340 3 East Vincent 215 4 East Pikeland 89 5 Spring City 131 6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, 812 12 West Vincent, South Coventry, 812 13 Upper Merion, Tredyffrin, 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	- (
3 East Vincent 215 4 East Pikeland 89 5 Spring City 131 6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, 812 12 West Pikeland, Charlestown, 113 13 Upper Merion, Tredyfirin, 1311 14 Rest of Montco 2212 15 Rest of Chesco 875 16 Nu, Delaware, Philly & Bucks 733 2414 Schuylkil 733	7	East Coventry	340	1.4%
4 East Pikeland 89 5 Spring City 131 6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, 812 3382 12 West Pikeland, Charlestown, 113 113 13 Upper Merion, Tredyffrin, 113 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	З	East Vincent	215	0.9%
5 Spring City 131 6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 9 Pottsgroves & Pottstown 812 10 Berks County 3382 11 West Vincent, South Coventry, 812 3382 12 West Pikeland, Charlestown, 113 113 13 Upper Merion, Tredyffrin, 113 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 Nu, Delaware, Philly & Bucks 733	4	East Pikeland	89	0.4%
6 Phoenixville 164 7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, B12 3382 12 West Vincent, South Coventry, B12 113 13 Upper Merion, Tredyffrin, 113 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	5	Spring City	131	0.5%
7 Upper Providence 286 8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, 3382 12 West Vincent, South Coventry, 812 13 Upper Merion, Tredyffrin, 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	9	Phoenixville	164	0.7%
8 Limerick & Royersford 714 9 Pottsgroves & Pottstown 6011 9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, West Vincent, South Coventry, 312 12 West Pikeland, Charlestown, 113 12 West Pikeland, Charlestown, 113 13 Upper Merion, Tredyffrin, 1311 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	7	Upper Providence	286	1.1%
9 Pottsgroves & Pottstown 6011 10 Berks County 3382 11 West Vincent, South Coventry, 3382 11 West Vincent, South Coventry, 812 12 West Pikeland, Charlestown, 113 13 Upper Merion, Tredyffrin, 113 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	8	Limerick & Royersford	714	2.8%
10 Berks County 3382 11 West Vincent, South Coventry, East Nantmeal, Warwick 3132 12 West Pikeland, Charlestown, 12 812 12 West Pikeland, Charlestown, 13 113 13 Upper Merion, Tredyffrin, 13 1311 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	6	Pottsgroves & Pottstown	6011	23.9%
11 West Vincent, South Coventry, East Nantmeal, Warwick 812 12 West Pikeland, Charlestown, Schuylkill 113 13 Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands 1311 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	10	Berks County	3382	13.4%
12 West Pikeland, Charlestown, 113 25huylkill 113 113 13 Upper Merion, Tredyffrin, 131 14 Rest of Montco 2212 15 Rest of Montco 2212 16 NJ, Delaware, Philly & Bucks 733	11	West Vincent, South Coventry, East Nantmeal, Warwick	812	3.2%
13 Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands 1311 14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733	12	West Pikeland, Charlestown, Schuylkill	113	0.4%
14 Rest of Montco 2212 15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733 Total Trips 25182 25182	13	Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands	1311	5.2%
15 Rest of Chesco 875 16 NJ, Delaware, Philly & Bucks 733 Total Trins 25182	14	Rest of Montco	2212	8.8%
16 NJ, Delaware, Philly & Bucks 733	15	Rest of Chesco	875	3.5%
Total Trins	16	NJ, Delaware, Philly & Bucks	733	2.9%
20102	Total Trips		25182	100.0%

TABLE 4B: Trip Distribution From East Coventry.

Destination Zones	Municipality	Trips Originating In Zone 2	Percent
1	North Coventry	343	3.1%
2	East Coventry	3105	28.5%
r	East Vincent	458	4.2%
4	East Pikeland	130	1.2%
5	Spring City	247	2.3%
9	Phoenixville	260	2.4%
7	Upper Providence	270	2.5%
8	Limerick & Royersford	891	8.2%
6	Pottsgroves & Pottstown	1087	10.0%
10	Berks County	587	5.4%
11	West Vincent, South Coventry, East Nantmeal, Warwick	349	3.2%
12	West Pikeland, Charlestown, Schuylkill	148	1.4%
13	Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands	1170	10.7%
14	Rest of Montco	965	8.9%
15	Rest of Chesco	501	4.6%
16	NJ, Delaware, Philly & Bucks	381	3.5%
Total Trips		10892	100.0%
Source: DVRPC	C 2025 Travel Demand Forecasts		

21

PA 724 Corridor Study

TABLE 4C: Trip Distribution From East Vincent.

Destination Zones	Municipality	Trips Originating In Zone 3	Percent
1	North Coventry	224	1.3%
2	East Coventry	471	2.7%
3	East Vincent	6190	36.1%
4	East Pikeland	556	3.2%
5	Spring City	298	1.7%
9	Phoenixville	751	4.4%
7	Upper Providence	617	3.6%
8	Limerick & Royersford	918	5.4%
0	Pottsgroves & Pottstown	725	4.2%
10	Berks County	503	2.9%
11	West Vincent, South Coventry, East Nantmeal, Warwick	865	2.0%
12	West Pikeland, Charlestown, Schuylkill	410	2.4%
13	Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands	1984	11.6%
14	Rest of Montco	1322	% <i>L</i> .7
15	Rest of Chesco	760	4.4%
16	NJ, Delaware, Philly & Bucks	546	3.2%
Total Trips		17140	100.0%

TABLE 4D: Trip Distribution From East Pikeland.

Destination Municipality Trips Trips Percolation In Zone 4 Percolation In Sone 4 Percolation Percolat				
1 North Coventry 85 0.49 2 East Coventry 128 0.69 3 East Vincent 537 2.69 4 East Vincent 537 2.69 5 Spring City 6433 31.2 6 Phoenixville 6433 31.2 7 Upper Providence 635 9.09 8 Limerick & Royersford 380 1.86 9 Pottsgroves & Pottstown 301 1.55 9 Pottsgroves & Pottstown 301 1.55 10 Berks County 380 1.75 10 Berks County 380 1.75 11 West Vincent, South Coventry, 360 1.75 11 West Vincent, South Coventry, 360 1.75 11 West Vincent, South Coventry, 360 1.75 11 Berks County 360 1.75 11 Berks County 360 1.75 11 Berks County	Destination Zones	Municipality	Trips Originating In Zone 4	Percent
2 East Coventry 128 0.65 3 East Vincent 537 2.65 4 East Vincent 537 2.65 5 Spring City 507 1.55 6 Phoenixville 6433 31.2 6 Phoenixville 6433 31.2 7 Upper Providence 635 3.19 8 Limerick & Royerstord 380 1.86 9 Pottsgroves & Pottstown 301 1.55 9 Pottsgroves & Pottstown 360 1.75 10 Berks County S60 1.75 10 Berks County 360 1.75 11 West Vincent, Narwick 360 1.75 11 West Vincent, Narwick 360 1.75 11 Vest of Narteel, Warwick 360 1.75 13 Upper Merion, Tredyfitin, 1.353 6.65 13 Upper Merion, Tredyfitin, 1.451 7.05 14 Rest of Mont	٢	North Coventry	85	0.4%
3 East Vincent 537 2.65 4 East Pikeland 6433 31.2 5 Spring City 6433 31.2 6 Phoenixville 6433 31.2 6 Phoenixville 635 9.05 7 Upper Providence 635 3.15 8 Limerick & Royersford 380 1.85 9 Pottsgroves & Pottstown 301 1.55 10 Berks County 301 1.55 11 West Vincent, South Coventry, 360 1.75 11 East Nantimeal, Warwick 360 1.75 13 Goshens, Willistown, Whitelands 4666 22.6 13 Goshens, Willistown, Whitelands 1451 7.05 15 <td>2</td> <td>East Coventry</td> <td>128</td> <td>0.6%</td>	2	East Coventry	128	0.6%
4 East Pikeland 6433 312 5 Spring City 307 1.55 6 Phoenixville 1865 9.09 7 Upper Providence 635 3.19 8 Limerick & Royersford 380 1.86 9 Pottsgroves & Pottstown 301 1.59 9 Pottsgroves & Pottstown 301 1.59 10 Berks County 380 1.76 11 West Vincent, South Coventry, 360 1.79 12 West Pikeland, Charlestown, 1353 6.69 13 Upper Merion, Tredyfirin, 1353 6.69 13 Upper Merion, Tredyfirin, 1353 6.69 13 Upper Merion, Whitelands 1451 7.09 14 Rest of Montco 1456 2.2	3	East Vincent	537	2.6%
5 Spring City 307 1.55 6 Phoenixville 1865 9.09 7 Upper Providence 635 3.19 8 Limerick & Royersford 380 1.85 9 Pottsgroves & Pottstown 301 1.85 9 Pottsgroves & Pottstown 301 1.55 10 Berks County 301 1.55 10 Berks County 301 1.55 11 West Vincent, South Coventry, 360 1.75 11 Berks County 360 1.75 11 Berks County 360 1.75 11 West Vincent, South Coventry, 360 1.75 11 Berks County 360 1.75 11 Berks County 360 1.75 11 Berks Vincent, South Coventry, 360 1.75 11 Berks Vincent, South Coventry, 360 1.75 11 Berks County 1.353 6.65 11 <t< td=""><td>4</td><td>East Pikeland</td><td>6433</td><td>31.2%</td></t<>	4	East Pikeland	6433	31.2%
6 Phoenixville 1865 9.05 7 Upper Providence 635 3.15 8 Limerick & Royersford 380 1.85 9 Pottsgroves & Pottstown 301 1.55 10 Berks County 346 1.75 10 Berks County 346 1.75 11 West Vincent, South Coventry, 360 1.75 11 West Vincent, South Coventry, 360 1.75 12 West Pikeland, Charlestown, 1353 6.65 12 West Pikeland, Charlestown, 1353 6.65 13 Upper Merion, Tredyffrin, 1353 6.65 14 Rest of Montco 1451 7.05 15 Rest of Chesco 885 4.35 16 NJ, Delaware, Philly & Bucks 883 4.35 16 NJ, Delaware, Philly & Bucks 883 4.35	5	Spring City	307	1.5%
7 Upper Providence 635 3.19 8 Limerick & Royersford 380 1.89 9 Pottsgroves & Pottstown 301 1.59 10 Berks County 301 1.79 11 West Vincent, South Coventry, 346 1.79 11 West Vincent, South Coventry, 360 1.79 12 West Vincent, South Coventry, 360 1.79 13 Upper Merion, Tredyffrin, 1353 6.69 14 Rest of Montco 1451 7.09 15 Rest of Montco 885 4.35 16 NJ, Delaware, Philly & Bucks 883 4.35 16 NJ, Delaware, Philly & Bucks 883 4.35	9	Phoenixville	1865	9.0%
8 Limerick & Royersford 380 1.85 9 Pottsgroves & Pottstown 301 1.55 10 Berks County 346 1.75 11 West Vincent, South Coventry, 12 346 1.75 11 West Vincent, South Coventry, 12 360 1.75 12 West Pikeland, Charlestown, 13 1353 6.65 13 Upper Merion, Tredyffrin, 13 1353 6.65 14 Rest of Montco 1451 7.05 15 Rest of Chesco 885 4.35 16 NJ, Delaware, Philly & Bucks 883 4.35 16 NJ, Delaware, Philly & Bucks 883 4.35	7	Upper Providence	635	3.1%
9 Pottsgroves & Pottstown 301 1.5° 10 Berks County 346 1.7° 11 West Vincent, South Coventry, 346 1.7° 11 West Vincent, South Coventry, 360 1.7° 12 West Vincent, South Coventry, 360 1.7° 12 West Pikeland, Charlestown, 1353 6.6° 13 Upper Merion, Tredyffrin, 1353 6.6° 14 Rest of Montco 1451 7.0° 15 Rest of Montco 885 4.3° 16 NJ, Delaware, Philly & Bucks 883 4.3° 16 NJ, Delaware, Philly & Bucks 883 4.3°	8	Limerick & Royersford	380	1.8%
10 Berks County 346 1.79 11 West Vincent, South Coventry, East Nantmeal, Warwick 360 1.79 12 West Pikeland, Charlestown, Schuylkill 1353 6.69 13 Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands 4666 22.6 14 Rest of Montco 1451 7.09 15 Rest of Chesco 885 4.39 16 NJ, Delaware, Philly & Bucks 883 4.39 16 NJ, Delaware, Philly & Bucks 883 4.39	6	Pottsgroves & Pottstown	301	1.5%
11 West Vincent, South Coventry, East Nantmeal, Warwick 360 1.7° 12 West Pikeland, Charlestown, Schuylkili 1353 6.6° 13 Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands 4666 22.6 14 Rest of Montco 1451 7.0° 15 Rest of Chesco 885 4.3° 16 NJ, Delaware, Philly & Bucks 883 4.3°	10	Berks County	346	1.7%
12 West Pikeland, Charlestown, 1353 6.6° Schuylkill 1353 6.6° 13 Upper Merion, Tredyffrin, 4666 22.6 14 Rest of Montco 1451 7.0° 15 Rest of Montco 885 4.3° 16 NJ, Delaware, Philly & Bucks 883 4.3°	11	West Vincent, South Coventry, East Nantmeal, Warwick	360	1.7%
13 Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands 4666 22.6 14 Rest of Montco 1451 7.09 15 Rest of Montco 885 4.39 16 NJ, Delaware, Philly & Bucks 883 4.39 16 NJ, Delaware, Philly & Bucks 20615 100.0	12	West Pikeland, Charlestown, Schuylkill	1353	6.6%
14 Rest of Montco 1451 7.0° 15 Rest of Chesco 885 4.3° 16 NJ, Delaware, Philly & Bucks 883 4.3° Total Trips 20615 100.0°	13	Upper Merion, Tredyffrin, Goshens, Willistown, Whitelands	4666	22.6%
15 Rest of Chesco 885 4.3 ^c 16 NJ, Delaware, Philly & Bucks 883 4.3 ^c Total Trips 20615 100.0	14	Rest of Montco	1451	7.0%
16 NJ, Delaware, Philly & Bucks 883 4.35 Total Trips 20615 100.0	15	Rest of Chesco	885	4.3%
Total Trips 20615 100.0	16	NJ, Delaware, Philly & Bucks	883	4.3%
	Total Trips		20615	100.0%

22

3. EXISTING PROBLEMS WITH RECOMMENDATIONS

Chester County's comprehensive plan recognizes that among the most significant issues facing Chester County's road infrastructure are:

- Spot congestion due to lack of capacity at most major intersections of arterial roads;
- Safety problems related to lack of separate turning lanes along most arterial and collector roadways; and
- Uncontrolled access along older arterial roads.

All of these conditions can presently be found on PA 724. Identification of these existing problems as well as other physical deficiencies on PA 724 were based in large part on task force input, municipal transportation impact fee studies (where available), township and county comprehensive plans, and many field views of the corridor. No evaluation of project costs was conducted for the recommended improvements given in this planning study. Such task would be conducted as part of a more detailed engineering study conducted by PennDOT with municipal input.

TURN LANES AND SIGNALS

Task force and municipal input was crucial to identifying the locations for the placement of turn lanes and/or signals on PA 724. Key to these decisions were,

- The location of proposed/future development in relation to PA 724.
- The location of heavily used cross roads or cut throughs within each municipality. Cut throughs are defined in this report as heavily used local roads, which provide motorists on PA 724 with short cuts through the townships to local business districts (e.g. Pottstown) and other major routes in the region such as US 30 and US 202.
- The location of connection roads to Schuylkill River crossings.
- The location of schools, firehouses, and other municipal services.
- Current Act 209 studies from the municipalities (where available).
- Corridor field views.

Figures 5A and 5B show the location and range of spot congestion problems and physical deficiencies on the corridor. In total, 11intersections and segments along PA 724 were identified as either congested and in need of mitigation or future locations of probable congestion. Table 5 lists these locations along with the recommended improvement(s). Further detail on each location is available in Appendix A. Figures 6A and 6B depict the recommended locations for additional turn lanes and traffic signals. Intersection capacity analysis was not conducted as part of this study.

TABLE 5: RECOMMENDED TURN LANE AND/OR TRAFFIC SIGNAL PLACEMENT LOCATIONS						
Intersection or Segment	Township	Reason for Turn Lane	Reason for Traffic Signal			
Laurelwood Road (NC2)	North Coventry	Congestion, vehicle stacking.	_			
US 422 Interchange (NC6)	North Coventry		Future growth in traffic volume from current 17,300 AADTs.			
Peterman Road (EC1)	East Coventry		Future residential development plans.			
Anderson Road (EC3)	East Coventry	Turning lanes for trucks into industrial park.	_			
Wells Road (EC4)	East Coventry	Cut through to river crossing.	Cut through to river crossing and commercial strip.			
Linfield Road (EC5)	East Coventry	Congestion, vehicle stacking.	_			
New Street (EV3)	East Vincent	Congestion	_			
Park Road (EV4)	East Vincent	Congestion, vehicle stacking.	Safety and congestion concerns caused by proximity to New Street.			
Bonnie Brae Road (EP1)	East Pikeland		Future residential development.			
East of Hares Hill Road (EP2)	East Pikeland	Safety and congestion concerns due to location of a water park and garden center on PA 724	Future residential development.			
PA 23 (EP4)	East Pikeland	Congestion, vehicle stacking.	_			

Source: DVRPC

Spot congestion on PA 724 at key intersections with cut throughs leading to the Schuylkill River crossings and other major routes is a problem for the corridor. With only four out of sixty intersections on the corridor with turn lanes, through traffic is often forced to wait for turning vehicles disrupting traffic flow and causing congestion. In addition, trucks serving surrounding commercial interests (e.g. the industrial park located on Anderson Road close to the intersection with PA 724) generally do not have enough road width to turn off or onto PA 724 without disrupting traffic flow and causing safety concerns.

Turning lanes would improve safety at intersections, reduce traffic delays and improve the corridor's operational capacity. Without turn lanes to help manage









safety and throughput on the corridor, congestion will only intensify as population and commercial/residential development pressures increase in the study area and surrounding region.

The rational behind the recommended placement of additional traffic signals is similar to that of turn lanes on PA 724: safety and improved operation of the corridor. There are currently seven traffic signals on PA 724. This report recommends six additional intersections that warrant additional study for the placement of traffic signals. These locations, shown in Figures 6A and 6B, are areas where current congestion, safety concerns and/or future development have the potential to negatively impact traffic flow on PA 724 if no action is taken.

The availability of right of way (ROW) to create turn lanes on PA 724 will impact the cost effectiveness and feasibility of this recommended option. Below is a PennDOT supplied analysis that lists the available ROW on PA 724 from the Berks County Line to PA 23:

- 1. From the Berks County Line to approximately 450 ft. east of Catfish Lane, the legal ROW is variable in width from 33 ft. to 85 ft.
- 2. From approximately 450 ft. east of Catfish Lane to approximately 900 ft. east of Laurelwood Road, the ROW is 33 ft.
- 3. From approximately 900 ft. east of Laurelwood Road to approximately 200 ft. east of Kline Avenue, the legal ROW is variable in width from 70 ft. to 120 ft.
- 4. From approximately 200 ft. east of Kline Avenue to Hanover Street, the legal ROW is 50 ft.
- 5. From Hanover Street to approximately 200 ft. east of Keim Street, the legal ROW is 33 ft.
- 6. From 200 ft. east of Keim St to approximately 250 ft. west of Vaughn Road, the legal ROW is variable in width from 65 ft. to 95 ft.
- 7. From approximately 250 ft. west of Vaughn Road to approximately 900 ft. west of Reitnour Road, the legal ROW is variable in width from 48 ft. to 120 ft.
- 8. From approximately 900 ft. west of Reitnour Road to approximately 1300 ft. west of Pikeland Avenue, the legal ROW is variable in width from 48 ft. to 60 ft.
- 9. From approximately 1300 ft. west of Pikeland Avenue to Ridge Road (PA 23), the legal ROW is 60 ft.

Right of way is variable along the majority of the corridor and as such, further detailed analysis will be required to see if turn lanes are feasible at the locations identified for improvements. Where right of way is not available, this report recommends converting shoulders into turn lanes.

ACCESS CONTROLS

PennDOT has functionally classified PA 724 as a minor arterial, which is defined as a roadway that facilitates intra-regional/inter-municipal through trips. As a minor arterial, its primary function is to serve through traffic in as continuous and safe a manner as possible. However, unlike a principal arterial, this type of roadway places more emphasis on accommodating access needs of locally generated traffic and fronting properties. For PA 724 to function in an efficient manner, it is incumbent upon municipalities to control access by ensuring all driveways comply with PennDOT's access regulations.

The Transportation Networks section of Chester County's long-range comprehensive plan *Landscapes* identifies uncontrolled access along older corridors (which includes PA 724) as a significant problem in the county. Uncontrolled access increases the difficulty of managing the conflicting functions of a minor arterial roadway: to serve through traffic and accommodate access to local driveways and roads. The emergence of PA 724 as a growth corridor and subsequent increases in traffic and development (and additional driveways) along the corridor can only exacerbate existing traffic problems if proper measures are not implemented. Good planning principals recognize access management as an essential part of controlling traffic congestion, minimizing traffic delays and improving safety on roadways. Encouraging adjacent properties to share driveways, utilize frontage roads, and use cross streets as access points whenever possible are ways to provide access without jeopardizing the efficiency of the roadway.

Chapter 441of the State Highway Law, *Access to and Occupancy of Highways by Driveways and Local Roads*, establishes criteria for access control to Pennsylvania state highways. Driveway design criteria, in Chapter 441, are a direct function of the anticipated driveway volume, which in turn is directly related to the land use of the property. Four levels of driveway use are specified: minimum use, low volume, medium volume, and high volume driveways. The mix of residential, commercial and industrial land use along PA 724 suggest driveway volumes that fall under the low and medium volume criteria. Tables 6A and 6B show PennDOT access regulations in reference to low and medium volume driveways abutting roadways with speeds above and below 45 mph. With few exceptions, PA 724 has a speed limit of 45 mph.

An analysis of existing driveways was conducted to determine which ones were in violation of PennDOT's access regulations. According to PennDOT, 28 feet is the maximum allowable width on PA 724 for medium volume driveways serving combination trucks. To simplify the analysis, only driveways in gross violation (driveway widths of 50 feet or more) were identified. Figures 7A and 7B show the locations of 20 properties, which have driveways that exceed this criteria. Additional information including business name, driveway width and aerial photographs of each location are available in Appendix C. Chester County Planning Commission access schematics in Appendix B offer descriptions of several improvement options to many of the access control problems encountered on the corridor.




In addition to the 20 properties in gross violation of PennDOT access codes, numerous other properties were in more minor non-compliance. Other than in the most grievous circumstances, this study recognizes municipalities cannot strictly enforce current standards on existing businesses. Instead, it recommends that when vacant properties are redeveloped, or an existing business substantially changes its land use, compliance with access regulations should be required.

TABLE 6A: ACCESS REGULATIONS FOR LOW VOLUME DRIVEWAYS								
	Single U	Single Unit Trucks & Passenger Cars			Buses & Combination Trucks			
	Roadway Speed			Roadway Speed				
	< 45 Mph		45 Mph 8	Greater	< 45 Mph 45 Mph & Grea		Greater	
	Min	Max	Min	Max	Min	Max	Min	Max
W- One Way	10'	20'	12'	20'	12'	15'	12'	20'
W- Two Way	20'	24'	20'	24'	22'	24'	22'	24'
R	10'	15'	15'	25'	35'	50'	45'	55'

W = Width

R = Radius

TABLE 6B: ACCESS REGULATIONS FOR MEDIUM VOLUME DRIVEWAYS								
	Single Unit Trucks & Passenger Cars			Buses & Combination Trucks				
	Roadway Speed			Roadway Speed				
	< 45 Mph		45 Mph &	Greater	< 45 Mph 45 Mph & Grea		& Greater	
	Min	Max	Min	Max	Min	Max	Min	Max
w	14'	28'	14'	28'	14'	28'	14'	28'
R	15'	30'	15'	50'	45'	55'	50'	55'

(Source: Department of Transportation, 1992. "Driveway design requirements" Chapter 441.8 and "Driveway layout illustrations" Chapter 441.9. *Pennsylvania Code for Access to and Occupancy of Highways by Driveways and Local Roads.* Commonwealth of Pennsylvania.)

SIGHT DISTANCE

The importance of adequate sight distance to the safety of both motorists and pedestrians cannot be underestimated. Sight distance is key to motorists' decisions such as entering traffic from a driveway or public road, giving sufficient time needed to avoid crashes and conflicts. Adequate sight distance helps to keep roadways operating safely and smoothly.

On PA 724, overgrown vegetation, high embankments at intersections, and the poor placement of signs, street furniture (bus shelters, trash cans etc.) and poles cause general sight distance problems. Ten intersections in particular (shown in Figures 5A and 5B) were identified as having poor sight distance. Additional

information on these intersections, together with specific recommendations, is included in Appendix A.

To improve sight distance conditions on PA 724, the following general recommendations should be considered:

- Routine pruning of roadside vegetation.
- Stricter municipal control on the placement of street furniture, signs, hedges and decorative objects (boulders, statues) especially at intersections.

SIGNAGE

Traffic signs (regulatory, advisory, warning, guidance, etc.) and pavement markings provide directional information and important visual cues that ensure the safe conduct of motorists especially at night. It is critical these signs and markings are visible, logical, consistent and properly placed. This will reduce the chance of missed information, leading to driver error, and a potential crash.

The majority of traffic sign deficiencies on PA 724 center on the lack of adequate information and/or warning for motorists approaching unsignalized intersections. Many of these intersections are not clearly delineated. Lack of signage further hinders motorists' ability to prepare for upcoming turning traffic and can impede deceleration and/or lane changes in preparation for a turn.

In general:

- Street name signs are inconsistent in color and size. Many are too small⁶ and fail to provide motorists with necessary information from adequate distancesa particular problem at night.
- Advance street name signs are often missing in advance of unsignalized intersections.
- Vegetation and guardrails often obscure warning and guidance signs on PA 724 and regulatory signs on minor streets at intersections.

This study recommends establishing a process to evaluate signs and pavement markings for visibility, and provide adequate maintenance and replacement schedules for these devices.

⁶ PennDOT publication 236 "Handbook of Approved Signs: Part 3" provides diagrams and guidelines on design and placement of street name signs.

SUMMARY

Development pressures and changes in population, employment and land use patterns in the surrounding local area and region have begun to highlight safety and capacity related deficiencies on PA 724. From existing traffic conditions in the corridor, it is evident that a lack of capacity at key intersections with cut through roads is leading to spot congestion, reducing the operational capacity of the corridor. In addition, development plans bordering minor roads that intersect with PA 724 have the potential to put further pressure on ill-equipped intersections. Other issues such as insufficient access controls, deficient signage and overgrown roadside vegetation all adversely affect safety and throughput on the corridor.

With a major widening (of the corridor) considered unfeasible by the task force, the main recommendations to improve the safety and efficiency of PA 724 are:

- The addition of turn lanes at key intersections and segments along PA 724 to maximize throughput while providing for turning local traffic.
- The placement of traffic signals at those intersections where a combination of turning conflicts, future growth in traffic volumes, and/or future development plans may negatively impact the intersection without some mitigation. These intersections will require further study.
- Enforcement of municipal access control ordinances along PA 724 as redevelopment occurs and/or new business take up residence.
- The general replacement of old street name signs and the addition of more advance street name signs approaching unsignalized intersections. These signs should meet PennDOT's current specifications on size, color, visibility and placement.
- Improved maintenance of roadside vegetation and proper placement of street furniture and signs corridor wide.

The majority of existing problems and recommended solutions in this report are common themes within each of the four municipalities included in the study area. This situation delivers an opportunity for these municipal authorities to develop an inter-municipal planning strategy to coordinate improvements and road management activities. This kind of mechanism provides a forum to build communication and consensus amongst the municipalities especially in access control and traffic circulation matters, a major goal for this study. PAGE LEFT INTENTIONALLY BLANK

APPENDICES

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APPENDIX A EXISTING PROBLEM LOCATIONS

NORTH COVENTRY EAST COVENTRY EAST VINCENT EAST PIKELAND

(pages A-1 to A-9) (pages A-10 to A-20) (pages A-21 to A-26) (pages A-27 to A-33) PAGE LEFT INTENTIONALLY BLANK

A-1

North Coventry





A-2



APPENDIX A: PA 724 Corridor Study Existing Problem Locations

Location	NC3 PA 724 at PA 100 overpass	
PA 724 Eastbound Approach		PA 724 Lane Geometry: Eastbound separate left-turn lane and through lane. Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: Traffic signal
obs	scured	Existing Problem PA 100 overpass obscures eastbound PA 724 traffic signal at the PA 100 northbound on ramp.
	Taffic signal	Recommendations Improve the visibility (size and placement) of signage warning of approaching signal ahead.

<u>A-4</u>

Location NC4 Keim Street / PA 724	
PA 724 Eastbound Approach	PA 724 Lane Geometry: One lane approach Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 35 mph Road Width: Traffic Control: Traffic signal at turn to US 422. None at intersection with South Keim Street.
PA 724 Eastbound Approach (after traffic signal)	South Keim Street Lane Geometry: One Iane approach Roadway Classification: Major Collector Roadway Ownership: Township Posted Speed Limit: 35 mph Road Width: 22 ft. Traffic Control: Stop sign (traffic signal at North Keim Street)
Keim Street Northbound Approach	Existing Problem Keim Street is disjointed with two separate PA 724 intersections located approximately 300 feet apart. South Keim Street northbound approach, hotel at the southeast quadrant and parked cars at gas station at the southwest quadrant limit sight distance. Intersection is congested and not clearly demarcated on PA 724. PA 724 eastbound approach, left-turn signal with no exclusive turn lane for traffic onto US 422.
PA 724 Parked cars obscure view of PA 724 westbound traffic.	Recommendations Long-term action – relocate interchange.

Location	NC 5 PA 724 between Keim Street & Vaughn Road		
PA 724 East	bound Approach	PA 724Lane Geometry: One lane approachRoadway Classification: Minor ArterialRoadway Ownership: State (S.R. 0724)Posted Speed Limit: 35 mphRoad Width:Traffic Control: N/AExisting ProblemPA 724 runs through the Village of Kenilworthwith narrow lanes and no shoulders. Roadconflicts with village atmosphere.RecommendationsNo action recommended.	

Location NC 6 PA 724/ US 422 Interchange	, ,
PA 724 Eastbound Approach (picture looking westbound)	PA 724 Lane Geometry: Eastbound, separate left- turn lane and through lane. Westbound, shared right-turn/through lane. Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: None
PA 724 Westbound Approach	Existing Problem Congested intersection with no traffic signalization. PA 724 eastbound approach, left turn lane onto US 422 has no pavement directional arrows. PA 724 westbound approach has no exclusive right turn lane- traffic is using the shoulder instead. Recommendations See aerial photo on the next page.



Location NC 7 Vaughn Road / PA 724	
Vaughn Road Northbound Approach	<u>Vaughn Road</u> Lane Geometry: One lane approach Roadway Classification: Local Roadway Ownership: Township Posted Speed Limit: 35 mph Road Width: 18 ft. Traffic Control: Stop sign
Street sign too small Pole obstructing driver's view of oncoming	PA 724Lane Geometry: One lane approachRoadway Classification: Minor ArterialRoadway Ownership: State (S.R. 0724)Posted Speed Limit: 45 mphTraffic Control: NoneExisting ProblemFor Vaughn Road northbound approach,
eastbound traffic.	embankment at the southeast quadrant and pole at the southwest quadrant limit sight distance. Intersection characterized by poor signage.
PA 724 Embankment obstructs driver's view of PA 724 westbound traffic.	<u>Recommendations</u> Relocate poles at both southern quadrants of the intersection. Cut back embankment at southeast quadrant. Relocate and improve street signage.

A-10 APPENDIX A: PA 724 Corridor Study Existing Problem Locations

East Coventry

Location	EC 1 Peterman Road / PA 724	
Peterman Ro	aad Northbound Approach	Peterman Road Lane Geometry: One lane approach Roadway Classification: Local Roadway Ownership: Township Posted Speed Limit: 35 mph Road Width: 19 ft. Traffic Control: Stop sign
PA 724 Lc	boking eastbound	PA 724 Lane Geometry: One lane approach Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: None
	Inlet	Existing Problem Peterman Road northbound approach: narrow at intersection due to inlets at both the southeast and southwest quadrants. This makes turning from PA 724 awkward.
PETERMAN	PA 724 Looking westbound	Recommendations See aerial photo on the next page.



A-12 APPENDIX A: PA 724 Corridor Study Existing Problem Locations







Location EC 4 Wells Road / PA 724	
<image/>	Wells RoadLane Geometry: One lane approachRoadway Classification: LocalRoadway Ownership: TownshipPosted Speed Limit: 35 mphRoad Width: 18 ft.Traffic Control: Stop signPA 724Lane Geometry: One lane approachRoadway Ownership: State (S.R. 0724)Posted Speed Limit: 45 mphTraffic Control: NoneExisting ProblemWells Road northbound approach: inlets atthe southeast and southwest quadrantsrestrict turning movements. On both PA 724approaches to Wells Road, no cleardemarcation of the intersection(indistinguishable from multiple driveways
PA 724 Looking eastbound	Recommendations See aerial photo on the next page.

A-16 APPENDIX A: PA 724 Corridor Study Existing Problem Locations

Location EC 5 PA 724 b/w Andersor	EC 5 PA 724 b/w Anderson Road and Linfield Road		
Commercial Properties bordering Southside of PA 724 PA 724 Looking eastbound	PA 724 Lane Geometry: One lane approach with shoulders Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph		
	Existing Problem Commercial district on the southern side of PA 724. PA 724 has no turn lanes for vehicles slowing down to enter these commercial properties.		
Multiple Driveways	Recommendations See aerial photo on the next page.		



A-18 APPENDIX A: PA 724 Corridor Study Existing Problem Locations







A-21

East Vincent





Location	EV2 Arch Street / PA 724			
Arch Street	Southbound Approach Trees obscure view of westbound traffic on PA 724.	Arch Street Lane Geometry: One lane approach Roadway Classification: Local Roadway Ownership: Township Road Width: 21 ft. Traffic Control: Stop sign		
	PA 724 Looking eastbound	PA 724 Lane Geometry: One lane approach Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: None		
	Embankment obstructs view of oncoming westbound traffic.	Existing Problem Arch Street southbound approach: at the northeast quadrant, high embankment, and vegetation limits sight distance.		
		Recommendations Cut back embankment and remove trees at intersection.		

A-24 APPENDIX A: PA 724 Corridor Study Existing Problem Locations

Location EV4 Park Road / PA 724	
Park Road Southbound Approach	Park RoadLane Geometry: One lane approach (ParkRoad north of intersection, Hill Church Roadsouth of intersection)Roadway Classification: LocalRoadway Ownership: State (S.R. 1041)Posted Speed Limit: 35 mphRoad Width: 23 ft.Traffic Control: Stop sign
PA 724 Eastbound Approach	PA 724 Lane Geometry: One lane approach Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: None
PA 724 Westbound Approach Stony Run Mobile Home Park Home Park Park Road Park Road Vehicle stacking obstructs driver's view of oncoming eastbound vehicles.	Existing Problem Congested intersection. Park Road southbound approach, turning east onto PA 724 is dangerous when traffic is backed up from New Street past Park Road. Stacking obscures drivers' view of eastbound vehicles on PA 724. It also obscures eastbound drivers' view of vehicles pulling out of Park Road to go east on PA 724. Stony Run Mobile Home Park is located on the south side of PA 724. Access onto the property's frontage is insufficiently controlled. Vehicles entering and exiting interfere with traffic flow on PA 724.
	Recommendations See aerial photo on the next page.


East Pikeland

Location EP1 -- Spring Hollow Road/ Bonnie Brae/ PA 724

Bonnie Brae Road Northbound Approach





Spring Hollow Road Southbound Approach





Spring Hollow Road and Bonnie Brae Road Lane Geometry: One lane approach (Spring

Hollow Road north of intersection. Bonnie Brae Road south of intersection).

Roadway Classification: Local Roadway Ownership: Township Posted Speed Limit: 35 mph (Spring Hollow Road). Road Width: 21ft. (north and south)

Traffic Control: Stop signs

<u>PA 724</u>

Lane Geometry: One lane approach Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: None

Existing Problem

Misaligned intersection. Spring Hollow Road to the north and Bonnie Brae Road to the south are approximately 100 feet apart. Spring Hollow Road southbound approach: vegetation at the northwest quadrant limits sight distance. Bonnie Brae Road northbound approach: cemetery wall at southwest quadrant limits sight distance.

Recommendations

See aerial photo on the next page.



A-29

Location

EP2 -- PA 724, east of Hares Hill Road

PA 724 Westbound Approach





PA 724 Eastbound Approach



PA 724

Lane Geometry: One lane approach Roadway Classification: Minor Arterial Roadway Ownership: State (S.R. 0724) Posted Speed Limit: 45 mph Traffic Control: N/A

Existing Problem

Deliveries to the garden center on the north side of PA 724 generates truck traffic, which often block PA 724. The vertical curve to the west of this location and the speed limit make these truck actions particularly dangerous to eastbound traffic. In addition, the water park facility generates significant traffic during the summer on both PA 724 approaches as vehicles turn onto the property.

Recommendations

See aerial photo on the next page.





A-32 APPENDIX A: PA 724 Corridor Study Existing Problem Locations





APPENDIX B CHESTER COUNTY PLANNING COMMISSION ACCESS MANAGEMENT SCHEMATICS

REALIGN ACCESS POINT

BEFORE



AFTER



Recommended if improper vertical or horizontal driveway alignments require correction.

REDUCE NUMBER OF ACCESS POINTS

BEFORE



AFTER



Redesign the driveway to reduce the number of access points onto the property. This will improve safety and reduce accident rates.

SIDE ACCESS

BEFORE



AFTER



Provide access point between adjacent properties. This design does not preclude separate front access to both properties but allows motorists to move between properties without using the primary road.

CHANNELIZED ACCESS

BEFORE



AFTER



Redesign front of property to channelize right turning vehicles. Uncontrolled access from large properties onto a primary road can lead to queuing and accidents (sideswipe, rear end).

COMBINE ACCESS POINTS

BEFORE



AFTER



Shared access onto properties on the same or adjoining parcels can eliminate the need for multiple access points.

ACCELERATION AND DECELERATION LANES

BEFORE



AFTER



Through traffic on primary roads move at high speeds and volumes offering few gaps to merge. An acceleration lane will allow right turning motorists onto a primary road to accelerate before merging into traffic. Conversely, a deceleration lane removes decelerating right turning vehicles from high speed through traffic on a primary road. Both types of deceleration lanes help reduce accident rates.

ACCESS MODIFICATIONS FOR LEFT TURN MOVEMENTS

BEFORE



AFTER



To improve safety and reduce stacking at intersection:

- Provide exiting vehicles with a separate left turn lane.
- Provide a left turn lane on the primary road with adequate storage capacity.

APPENDIX C TABLE OF ACCESS CONTROL PROBLEM LOCATIONS

NORTH COVENTRY (pages C-1 to C-2) EAST COVENTRY (pages C-3 to C-5) EAST VINCENT (pages C-5 to C-8) EAST PIKELAND (page C-8)

Locations	
ontrol Problem	
dy Access Co	
Corridor Stud	
ENDIX C: PA 724	
APF	

Loc	ation	Business Name	Existing Problem	Driveway Width	Comments
Nor	th Coventry			_	
.	Southwest quadrant of Street Street	Ramble In Pizzeria / Wayne Scott's Import Service		57 ft.	Other entrance onto the property located on South Hanover Street.
R	Northwest quadrant of US 422 interchange at Kiem Street	Highlander Center Mini- Shopping Mall (includes dry cleaners, laundromat, hair salon, pet groomers)	PA 724	16 ft.	
ю	North side of PA 724 approximately 300 ft. east of US 422 Bypass	H&F Tire Service / John Ruckus Auto Sales	PA 724	174 ft.	

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Loc	ation	Business Name	Existing Problem	Urlveway Width	Comments
4	North side of PA 724 approximately 300 ft. from Vaughn Road (west of the East Coventry Township Line)	Coldwell Banker Diamond Realtors	PA 724	98 ft.	
ن.	Southwest quadrant of Vaughan Road	Kennilworth Deli	PA 724	1) 54 ft. 2) 27 ft. 3) 40 ft. 4) 58 ft.	Four entrances onto the property- three from PA 724 and one from Vaughan Road.
	PA 724				

5-7 0-7

Comments					
Driveway		258 ft.		253 ft.	110 ft.
Existing Problem		PA 724			
Business	Naille	Coventry Cafe		Vacant Property	Wunderlich's Garage
cation	st Coventry	North side of PA 724 approximately 800 ft. east of the East Coventry	Township line.	Southwest quadrant of Peterman Road	North side of PA 724 approximately 1100 ft. east of Sanatoga Road
Loc	Eas	Ö		Ň	ω

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way Comments	Entrances onto property from both PA 724 and Anderson road.		
Drive Widt		88 ft.	152 ft.
Existing Problem		PA T24	
Business Name	Rudick's Welding & Machine Shop	Auto Quest Collision	U-Haul
ation	Southwest quadrant of Anderson Road	North side of PA 724 approximately 700 ft. east of Wells Road	South side of PA 724 approximately 800 ft. east of Wells Road
Loc	ு	10.	÷.

0-4

Lo(ation	Business Name	Existing Problem	Driveway Width	Comments
5	South side of PA 724 approximately 350 ft. west of Bethel Church Road	Tilt & Clean Rain Gutter Systems		82 ft.	
Ea:	st Vincent				
13.	South side of PA 724 approximately 300 ft. east of Bridge Street	RMC Environmental Services	PA T24	70 ft.	



Comments	Curved driveway serving two businesses. Additional driveway onto Mooney's Mobile Home Park located just off the western mouth of the larger driveway.	Three entrances onto the property's parking lot with substandard separation. Minimum required separation between driveway entrances is 10 feet.
Driveway Width	1) 63 ft. 2) 37 ft.	1) 22 ft. 2) 18 ft. 3) 74 ft.
Existing Problem		Pa 724
Business Name	 Mooney's Mobile Home Park. Cezoma Internation al Inc. / Versitex All American Rods 	Gallagher's Country Tavern
ation	North side of PA 724 approximately 200 ft. east of Pennhurst Road	North side of PA 724 approximately 350 ft. east of Arch Street
Loc	14.	15.

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ation	Business Name	Existing Problem	Driveway Width	Comments
h side of PA oximately ft. west of Street	GlennGarry Research Lab		78 ft.	
th side of PA roximately ft. west of V Street	Don Wallace Auto Sales		150 ft.	
thwest drant of Hill rch Road	Stony Run Mobile Home Park	FA 724 PA 724	1) 88 ft. 2) 30 ft.	Two entrances onto property with substandard separation. Minimum required separation 10 feet.

C-7

Loci	ation	Business	Existing Problem	Driveway Width	Comments
-1 .	Northeast quadrant of Park Road	Great Valley Publishing Company	PA 724	65 ft.	Driveway space in front of property functions as a parking lot. Consider limiting parking to the western side of the property where parking already exists.
Eas	t Pikeland				
20.	North side of PA 724 approximately 1100 ft. East of Hares Hill Road	Tony's Family Restaurant		136 ft.	

PA 724 Corridor Study

Publication No.: 04021

Date Published: September 2004

Geographic Area Covered: The extent of PA 724 under study runs for 11.8 miles along the northern edge of North Coventry, East Coventry, East Vincent and East Pikeland townships in Chester County.

Key Words: Spot congestion, safety, corridor study, access management, turn lanes, traffic signals.

ABSTRACT:

This report documents a study to identify efficient, low cost alternatives for improving the operation, capacity and safety of PA 724. Lack of capacity at key intersections, poor sight distance, uncontrolled access and inadequate signage were identified as safety and operational concerns on PA 724. Overall, the addition of turn lanes and signals, better access management, and improved roadside maintenance (e.g. regular pruning of roadside vegetation) were found to be the most feasible options. A task force was convened made up of representatives from North Coventry, East Coventry, East Vincent and East Pikeland townships as wells as PennDOT, Tri County Chamber of Commerce and DVRPC staff. To improve traffic operations, task force members agreed that major widening of PA 724 was not an option. Turn lanes recommended in the study would require conversion of existing shoulders or expansion of PA 724 where right of way already exists. Recommended signal locations were based in large part on the location of proposed development. The recommendations in this report were based on field views, municipal and task force input, and Act 209 studies.

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