

# ACCESS MANAGEMENT

*Along Pennsylvania Highways*

IN THE DELAWARE VALLEY



County Line Road/PA 309

*Case Study Corridor*



Delaware Valley Regional Planning Commission

2005

**DRAFT**

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## County Line Road/PA 309

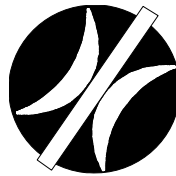
*Case Study Corridor*



Delaware Valley Regional Planning Commission

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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. The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

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## **EXECUTIVE SUMMARY**

This report presents a conceptual plan for the improvement of congestion and safety along County Line Road / PA 309 between North Wales Road and the Sellersville Bypass. The project began in support of PENNDOT's effort to create model access management ordinances for implementation by municipalities statewide. Because of its relation to PENNDOT's statewide access management project, this report and the recommended improvement strategies focus largely on access management principles.

DVRPC's access management work program involved a regional steering committee comprised of regional and county transportation and community planners, and representatives from the City of Philadelphia's Streets department, PENNDOT District 6-0 Traffic Engineering and Highway Permits units, and SEPTA Service Planning department. This steering committee helped DVRPC staff during all of the steps of this project. With the help of the steering committee members, DVRPC staff identified two corridors for case study evaluation – County Line Road, PA 3 (North Wales Road to the Sellersville Bypass) and City Avenue, US 1 (63<sup>rd</sup> Street to I-76 interchange ramps). Each corridor illustrates a different area type and development pattern, and therefore, are good examples of access management implementation in diverse circumstances.

Initially, PENNDOTs' ordinances were to be organized around "area type", which is one reason why the case study corridors are so diverse. The current project plan calls for the ordinances to be based on functional class. Even with this change in emphasis, the chosen corridors are useful for illustrating the applications of access management in diverse settings.

This Technical Memorandum focuses on County Line Road, which consists of the relatively sparse, strip commercial development typical of suburban areas. Sidewalks are not common in the corridor and subsequently pedestrian use of the corridor is very low. Since this corridor is currently becoming more popular for development, access management techniques here could be mixed between retrofit strategies and policies to guide future development and access onto County Line Road.

DVRPC staff evaluated PENNDOT's model ordinances in relation to the current conditions along the County Line Road case study corridor and identified the access management approaches that would have the greatest impact on the corridor. These approaches were then assembled into a theoretical conceptual plan. A map of this plan is available in the back pocket of the report, and a more detailed explanation is provided in the supporting text.

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## 1 INTRODUCTION

Access management is one of many strategies that a municipality can use to improve the function of its roadways. The methods employed in access management seek to optimize and maintain the existing transportation system while preparing for its future growth. Access Management is a relatively low cost strategy to reduce congestion and increase both the efficiency and safety of a roadway. When consistently implemented, these strategies produce impressive results. National studies show that access management techniques can contribute to a 40 percent reduction in highway collisions and may increase vehicular mobility by 30 percent. The methodology behind DVRPC's work program emphasized the correct implementation of appropriate access management strategies in association with PENNDOT's Model Access Management Ordinances project to extend the serviceability and improve the traffic safety along state and local roads.

The methodology of the Delaware Valley Regional Planning Commission's (DVRPC) Access Management Planning is based in its regional Congestion Management System (CMS) Planning. The aim of the Congestion Management System is to minimize congestion and enhance the mobility of both people and goods. Additionally, the Congestion Management System acts as a connection between the region's Long Range Plan and the region's Transportation Improvement Program (TIP) to ensure that the appropriate regional transportation facilities are improved. An initial step of Congestion Management System Planning was to define congested corridors and subcorridors within the Delaware Valley. The system plan then considered the characteristics of each subcorridor and provided strategies for congestion mitigation at each location — one being access management strategies.

DVRPC's access management work program was created to support the effort of PENNDOT's Model Access Management Ordinance project. Since the DVRPC's work program for this project focused on case studies, it was a logical step to use the Congestion Management System Planning as a guiding philosophy for choosing case study areas. To help DVRPC narrow in on candidate case study corridors, a steering committee was formed to contribute to the work and provide comments on the products of PENNDOT's statewide program. The steering committee was comprised of regional and county transportation and community planners, and representatives from the City of Philadelphia's Streets department, PENNDOT District 6-0 Traffic Engineering and Highway Permits units, and SEPTA Service Planning department. This steering committee helped DVRPC staff during all of the steps of this project. With the help of the steering committee members, DVRPC staff identified seven preliminary corridors for evaluation. The initial evaluation considered several documents and factors such as land use, future growth areas, area type, and accident records. Congestion Management System documents were utilized to identify high priority corridors in which access management was specified as an appropriate congestion management strategy. The Delaware Valley Regional Planning Commission's year 2005 forecast of congested highway facilities was also consulted to narrow down the possible case study areas.

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After analyzing the aforementioned resources two corridors were selected as case studies for this work program – City Avenue, US 1 (63<sup>rd</sup> Street to I-76 interchange ramps) and County Line Road, PA 3 (North Wales Road to the Sellersville Bypass). Each corridor illustrates a different area type and development pattern, and therefore, are good examples of access management implementation in diverse circumstances.

Initially, PENNDOTs' ordinances were to be organized around "area type", which is one reason why the case study corridors are so diverse. The current project plan calls for the ordinances to be based on functional class. Even with this change in emphasis, the chosen corridors are useful for illustrating the applications of access management in diverse settings.

This Technical Memorandum focuses on County Line Road, which consists of the relatively sparse, strip commercial development typical of suburban areas. Sidewalks are not common in the corridor and subsequently pedestrian use of the corridor is very low. Since this corridor is currently becoming more popular for development, access management techniques here could be mixed between retrofit strategies and policies to guide future development and access onto County Line Road.

On the other hand, City Avenue is characterized by dense development with mixed land uses directly abutting sidewalks. The presence of St Joseph's University within this corridor contributes to a high level of pedestrian use in some areas. This corridor represents a more urban area type and would primarily require retrofit access management strategies. A separate Technical Memorandum discusses access management in this corridor.

## **2 ROADWAY CHARACTERISTICS**

Recently a center left turn lane was added along County Line Road, the length of the case study corridor, making this segment a principal arterial with five travel lanes. PA 309 is a heavily utilized north-south thoroughway in the region. Land use within the County Line Road segment of PA 309 is characterized by strip commercial development surrounded by light density uses. While a considerable share of the land directly adjacent to the County Line Road portion of PA 309 is vacant, the developed lots are primarily commercial and light industrial. The Delaware Valley Regional Planning Commission's 2000 Land Use map shows that opportunities for infill development are especially prevalent in the northwestern section of the corridor, north of Mill Road and Unionville Pike in Hilltown Township (Bucks County). For a more detailed illustration of the 2000 land use, please see Figure 1 on the next page.

The R5 (Doylestown) SEPTA Regional Rail line operates within the PA 309 corridor. The R5 travels north from the City of Philadelphia to the suburbs of Bucks County with its terminal in Doylestown. The Colmar Station (Bethlehem Pike / PA 309 & Walnut Street) is in the case study area.

In October 2005 SEPTA's bus route 132 (formerly Route 96) will be revised to operate along Unionville Pike to County Line Road, and to continue on County Line Road where it intersects with Broad Street in Souderton Borough. This route will provide the only bus

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service in the case study area, and will operate at 60-minute intervals from 6:00AM to 8:00PM between Landis Market (in Rockhill Township) and the Montgomery Mall. While Route 132 is defined as part of SEPTA's Fy 2006 Annual Service Plan, SEPTA staff is interested in discussing further modifications to the route in the event that other service roads, such as those recommended in the Access Management Plan, are constructed. These service roads would allow for improved penetration of the current light industrial land uses, as well as any future commercial and retail development on or near County Line Road.

Traffic conditions within the corridor illustrate considerable levels of volume and congestion. Figure 1 shows the traffic levels along the corridor more precisely. With a speed limit of 40-45 mph, the Annual Average Daily Traffic (AADT) for the County Line portion of the corridor ranges from 35,000 to 45,000. South of this area, from North Wales Road to the County Line Road segment, AADT drops between 25,000 and 35,000 while the area north of PA 63 exhibits AADT's of about 38,000. Additionally, the overall volume to capacity ratio (V/C Ratio) along the corridor is 0.86, with 1.06 typical along the County Line Road segment.

Staff also collected traffic accident data for the County Line Road corridor. The explanation and analysis of this data is revealed in further detail below. In short, driveway accidents were the most common accident types along County Line Road. Furthermore, these accidents were primarily concentrated in the southernmost portion of County Line Road near Orvilla Road and Line Lexington Road.

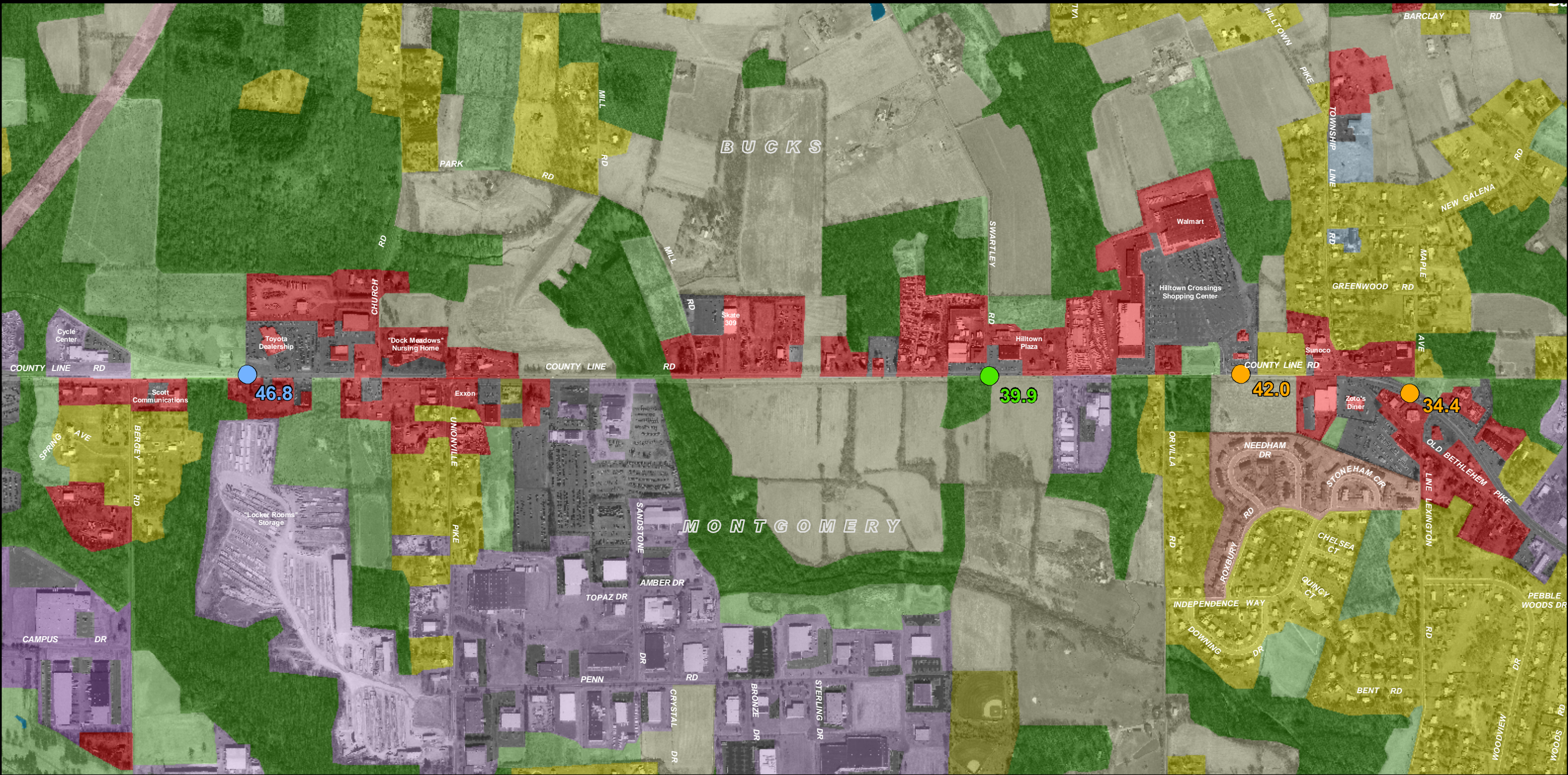
While access management techniques can improve the function of nearly any roadway, the County Line Road segment of the corridor (from approximately Line Lexington Road to Sellersville Bypass) is a prime example of the immediate impact that access management techniques can have along a developing corridor. This area, once sparsely developed by light manufacturing uses, is increasingly being utilized for commercial development. This steady construction has resulted in a greater number of driveways and other access points that could be controlled and coordinated with access management techniques. Likewise, the corridor is still characterized by large areas of vacant or wooded land, on which future development and access could be guided with the help of access management strategies and policies. This area also experiences higher traffic volumes, with AADT's in the range of 35,000 to 45,000 and a 1.06 v/c ratio. Traffic accidents also occur at higher rates within the commercial areas of County Line Road.

Due to this further analysis, DVRPC staff narrowed the scope of the PA 309 case study to a more concise corridor for conceptual plan development — beginning at Line Lexington Road and continuing to Bergey Road. This revised corridor is studied in the following traffic analysis and access management plan.



County Line Road (PA 309) Case Study Corridor

Figure 1:  
Traffic Volumes & Land Use



Scale: 1" = 790'

DELAWARE VALLEY  
REGIONAL PLANNING COMMISSION  
JUNE 2005\*

\*Aerial photos from the year 2000

TOTAL DAILY TRAFFIC VOLUME  
AS OF 2/3/04 (IN THOUSANDS)

● 1998

● 2002

● 2003

2000 LAND USE

Residential: Single-Family Detached

Residential: Multi-Family

Manufacturing: Light Industrial

Manufacturing: Heavy Industrial

Transportation And Parking

Utility

Commercial

Community Services

Recreation

Agriculture

Wooded

Vacant

Water







### 3 TRAFFIC SAFETY EVALUATION

Access Management aims to improve both the efficiency and safety of a given roadway or corridor. To assess the current traffic safety conditions along PA 309, County Line Road, traffic accident reports on file with the local police departments were used in conjunction with the available PENNDOT information. The Delaware Valley Regional Planning Commission staff was requested to do this by a PENNDOT representative of the Regional Access Management Task Force. The motivation being to illustrate the full depth of the accident situation and to provide a basis for “before and after” safety analysis relative to the addition of a continuous center left turn lane that was being constructed while this case study was in progress.

PENNDOT traffic accident information is available through a database of reportable accidents<sup>1</sup> occurring on state and local highways in the commonwealth. Number of accidents, general accident patterns and causation factors have been summarized and categorized.

Municipal accident records document both reportable and non-reportable accidents. Very often the municipal records are the original copies of the police accident reports, yielding much greater detail about each accident that occurred in the corridor. While a range of years is available at each police station, to keep the analysis consistent with the State’s records, accidents occurring over the five year period between 1998 and 2003 on both state and local roadways within the corridor were studied.

Access management aims to increase safety by reducing through travel interruptions and making vehicle entrances and exits to/from intersecting driveways and roadways as controlled as possible. Organizing traffic accidents by location and type is a logical way to assess the common problems in the corridor. With general knowledge as to the cause of the incidents, a focused group of possible access management related solutions was derived.

#### ***Locations:***

A summary of the accident situation along County Line Road according to municipal accident records is detailed below. Locations where a higher number of accidents occurred in comparison to the incident occurrence corridor-wide are known hereafter as “priority locations.” These areas are more closely evaluated. With the use of municipal accident data, the priority locations can be narrowed to a relatively small section of roadway in which the accidents occurred.

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<sup>1</sup>Reportable accidents in Pennsylvania are defined to be those resulting in injury or death and/or requiring a tow-away. These are the only accidents that are reported to PENNDOT and kept on file in their database. Non-reportable traffic accident reports are only available through the municipality in which the accident occurred.

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The four priority locations along County Line Road are its intersection(s) with:

#	Priority Location
1	Bergey Road
2	Unionville Pike
3	Orvilla Road
4	Line Lexington Road

Table 1 summarizes the traffic accident conditions for the County Line Road corridor, with a focus on the priority locations.

**TABLE 1 - ACCIDENT LOCATIONS  
PA 309 / COUNTY LINE ROAD CORRIDOR**

LOCATION	ACCIDENTS (1998-2003)						INJURIES	FATALITIES
	REPORTABLE		NON - REPORTABLE		TOTAL			
	#	% of Total	#	% of Total	#	% of Total		
Bergey Rd	43	21.0	65	20.6	108	20.8	33	1
Unionville Pike	48	23.4	121	38.4	169	32.5	43	0
Orvilla Rd	62	30.2	53	16.8	115	22.1	70	0
Line Lexington Rd	52	25.4	76	24.1	128	24.6	39	0
TOTAL	205	39.4	315	60.6	520	100.0	185	1

Source: Municipal Accident Data (Hilltown, New Britain, Hatfield Twps)

Only one fatality was recorded in over 500 accidents occurring within the priority locations. Approximately forty percent of the traffic accidents across the entire corridor were “reportable” accidents. Each priority location shows a similar trend, with about forty to sixty percent reportable accidents at each location.

As shown in Table 1, the highest frequency and concentration of reportable accidents occurs at the intersection of County Line Road and Orvilla Road. Sixty-two reportable accidents took place in the vicinity of this intersection, making up twelve percent of all accidents within the priority locations. Ten percent of the priority location reportable accidents occurred at Line Lexington Road (52), nine percent at Unionville Pike (48), and eight percent (43) at Bergey Road. The higher volume of collisions in the area of Orvilla Road may be due to the higher volume of traffic and turning movements to/from the Hilltown Crossings Shopping Center, located as the fourth leg of this intersection. Also, the offset nature of Orvilla Road’s intersection with the Hilltown Shopping Center is a less than desirable alignment. The other priority locations in the corridor do not have such concentrations of traffic in the immediate vicinity.

Municipal accident data was used to establish the traffic accident situation for the County Line Road corridor. This more specific data was crosschecked with PENNDOT cluster data to ensure that all incidences were captured. While the detail included in municipal data allows traffic accident locations and patterns to be more precisely mapped and understood, the accident records of reportable accidents were the same as those provided in PENNDOT’s database. Thus, there is no loss of general traffic accident information by using PENNDOT’s data rather than local records. Nevertheless, there is a lack of detail that is necessary to most accurately address safety and congestion issues.

### Patterns:

The Pie charts in Figure 2 provide a comparison of the types of accidents that occurred in each priority location. Only reportable accidents collected from the municipal police accident reports were diagramed. The size of the pie chart is reflective of the number of accidents occurring at that priority location. As shown, there is a higher volume of accidents at the intersection of Orvilla Road (location #3) and also at Line Lexington Road (location #4) than the other two priority locations. All locations show a high proportion of angle (yellow) and rear-end (blue) accidents. The remaining composition varies between sites. For example, “Hit fixed object” accidents, mostly due to speeding and/or careless turning, are common types in the area of Bergey Road. Alternatively, accidents at Line Lexington Road were more frequently non-collision accidents caused by drivers that lost control of their vehicle due to sleepiness, weather conditions, or vehicle malfunctions. Access management strategies cannot prevent these latter types of accidents but can address the rear-end and angle accidents.

Table 2 corresponds to the pie charts in Figure 2 and details the type of reportable accidents at each priority location.

**TABLE 2 - ACCIDENT PATTERNS  
PA 309 / COUNTY LINE ROAD CORRIDOR (REPORTABLE ACCIDENTS ONLY)**

Accident Type	Bergey Rd		Unionville Pike		Orvilla Rd		Line Lexington Rd		TOTAL	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% of Total
Non - Collision	4	9.3	1	2.1	3	4.8	5	9.6	13	6.3
Rear-End	12	27.9	21	43.8	28	45.2	14	26.9	75	36.6
Head On	0	0.0	0	0.0	1	1.6	1	1.9	2	1.0
Backing Up	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Angle	16	37.2	19	39.6	26	41.9	29	55.8	90	43.9
Sideswipe	1	2.3	2	4.2	2	3.2	0	0.0	5	2.4
Hit Fixed Object	8	18.6	3	6.3	2	3.2	2	3.8	15	7.3
Hit Pedestrian	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
All Others	2	4.7	2	4.2	0	0.0	1	1.9	5	2.4
Unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>TOTAL</b>	<b>43</b>	<b>21.0</b>	<b>48</b>	<b>23.4</b>	<b>62</b>	<b>30.2</b>	<b>52</b>	<b>25.4</b>	<b>205</b>	<b>100.0</b>

Source: Municipal Accident Data (Hilltown, New Britain, Hatfield Twps)

Angle accidents account for forty-four percent of all accidents within the priority locations. Thirty-six percent of incidents are rear-end accidents. Three-quarters of all angle accidents occurred in one of the four priority locations, while almost half of all rear-ends happened within the priority locations. The PA 309 Corridor does not exhibit pedestrian related accidents. This portion of County Line Road is a developing suburban thoroughfare that lacks sidewalks, local transit service, and abutting residential land use, and as such, generates low pedestrian activity.





County Line Road (PA 309) Case Study Corridor

Figure 2:  
Traffic Accident Types  
at Priority Locations



Type of Accident at Accident Priority Locations									
Number	Location	# of Accidents	Non-Collision	Rear-End	Head On	Angle	Sideswipe	Hit Fixed Object	Other
1	Bergey Road	43	9.3%	27.9%	0.0%	37.2%	2.3%	18.6%	4.7%
2	Unionville Pike	48	2.1%	44.7%	0.0%	38.3%	4.3%	6.4%	4.3%
3	Orville Road	62	4.8%	45.2%	1.6%	41.9%	3.2%	3.2%	0.0%
4	Line Lexington Road	52	9.6%	26.9%	1.9%	55.8%	0.0%	3.8%	1.9%

\* Size of chart proportional to the number of accidents at each location

Source: Municipal accident reports (1998 - 2003)





During the analysis of this data it was found that certain types of accidents occurred frequently throughout the corridor. The two most common accident patterns: (1) rear end collisions at intersections and mid-block locations and (2) left turn collisions at intersections and mid-block.

A description of the nature of each pattern is provided and where appropriate, general countermeasures to remediate the accident type are identified. This section is intended to provide a preliminary understanding of access management and traffic safety improvement techniques that can be implemented in the presence of existing conditions.

### ***Causation Factors:***

#### ***Rear End Collisions at Intersections and Mid-Block***

The addition of a continuous center left turn lane (fall 2004/winter 2005) will help to address rear end collisions and congestion along County Line Road. Prior to the addition of this lane, irregular left and right turn lanes both at intersections and mid-block locations, cause more turns to be executed from through travel lanes. Frequent turns into numerous driveways on both sides of the roadway increased confusion as well as the possibility of a rear end accident, as the car following the turning vehicle would have to stop unexpectedly. Similarly, small turning radii, insufficient corner clearance, and restricted sightlines are contributing factors that are still common at various points throughout the corridor.

#### ***Left Turns at Intersections and Mid-Block***

Throughout the corridor, newer, larger developments are occurring at major intersections, supported with protected left turn lanes, acceleration / deceleration lanes, and traffic signals. Conversely, the corridor's older development is characterized by individual small parcels and curb cuts and unsignalized mid block driveways. Regardless of the access location, these numerous entrance points complicate the driving environment and create many conflict points.

The high volume of left turns throughout the corridor has contributed to congestion as vehicles waiting to make a left turn block through traffic. The high volume of left turns also contributes to accidents. In 2004 a continuous center-left-turn lane was installed in the corridor to address the congestion and left turn and rear-end accident situation. While it is too early to assess the affects of this additional lane, national and regional trends suggest that the corridor improvement should yield a decrease in overall congestion, an increased consistency for turns, and a reduction of accident rates. Municipal traffic accident reports, tabulated in the data collection phase of this case study, can serve as a basis for a before - and - after evaluation associated with the continuous center left turn lane.

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### ***Countermeasures:***

County Line Road is a steadily developing suburban style commercial strip. For the most part, commercial land uses are surrounded by light manufacturing and undeveloped land. While traffic signals regulate many of the turning movements along the corridor, unsignalized private driveways also frequently meet the roadway.

Implementing access management strategies — to mitigate accidents — can be a mixture of retrofitting highway and previously constructed driveway designs and regulating the location and design of future development access points. Because of its developing nature, the opportunities for roadway redesign and/or reconstruction are prevalent along County Line Road. The implementation of some of the recommended access management improvements, such as joint driveways or cross access, would require a partnership between individual property owners and developers and local municipalities. Funding for the implementation of larger, corridor-wide, strategies, may be pursued through DVRPC's Transportation Improvement Program (TIP), or other state and federal transportation programs. In some instances, the recommended access management techniques may be incorporated into a broader roadway improvement project. This arrangement not only ensures the most efficient use of limited transportation funds, but is also likely to cause the least disruption to the roadway and its travelers.

The Model Access Management Ordinances drafted by PENNDOT were used as a basis for the case study corridor recommendations. These ordinances are separated into three tiers that each address different access management techniques. The first tier focuses on access management techniques for individual parcels, while the second tier addresses techniques for roadways, and the final tier reviews more complex comprehensive traffic planning practices.

DVRPC staff evaluated these tiers in relation to the current conditions along the County Line Road case study corridor and identified the access management approaches that would have the greatest impact on the corridor. Some of these principles involve retrofit implementation while others can help to lay the groundwork of a vision for the corridor before development occurs.

The recommendations that follow are not an inclusive listing but rather a selection of strategies appropriate for the existing condition —leading toward a conceptual plan for the County Line Road corridor.

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## 4 CONCEPTUAL PLAN

The conceptual plan was generated with consideration given to the existing conditions and the Model Access Management Ordinances.

Figure 3, located in the back pocket of this report, visually details the conceptual plan for this corridor. Table 3 below details the current conditions along County Line Road compared with the elements and adjustments included in the conceptual plan to address the corridor's future.

**TABLE 3 – ACCESS MANAGEMENT STRATEGIES  
PA 309 / COUNTY LINE ROAD CORRIDOR**

CHARACTERISTIC	CURRENT	PLAN
<b>NOTABLE AM TECHNIQUES</b>	<ul style="list-style-type: none"> <li>§ (New) Center turn lane</li> <li>§ Some access from side streets</li> <li>§ Channelized driveways where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>§ Improved signal spacing</li> <li>§ Service roads</li> <li>§ Joint driveways &amp; cross access</li> <li>§ Divided median</li> <li>§ Restricted turning movements</li> <li>§ Right turn deceleration lanes at signalized intersections</li> </ul>
<b># OF SIGNALS</b>	§ 5	<ul style="list-style-type: none"> <li>§ 7</li> <li>§ One moved, one removed, three added</li> </ul>
<b>SIGNAL SPACING</b>	<ul style="list-style-type: none"> <li>§ Between Unionville Pk and Orvilla Rd: over 5,000ft</li> <li>§ Area of Hilltown Crossings Shopping Center: under 1,000ft</li> </ul>	<ul style="list-style-type: none"> <li>§ Overall: about 3,000ft</li> <li>§ Area of Hilltown Crossings Shopping Center: under 1,000ft</li> </ul>
<b># PUBLIC STREETS</b>	§ 8	§ 13
<b>PUBLIC STREET SPACING</b>	§ About 2,500ft	§ About 1,500ft
<b># DRIVEWAYS</b>	§ 57	<ul style="list-style-type: none"> <li>§ 15</li> <li>§ Closed 42 driveways &amp; provided joint access with other parcels</li> <li>§ Added 3 new driveways</li> </ul>
<b>DRIVEWAY SPACING</b>	§ Less than 200ft	§ About 400-600ft

During the evaluation of the case study corridor, it was found that access management strategies are already being introduced in the corridor as newer development occurs. A new continuous two-way center left turn lane, was just completed in the fall of 2004 / winter 2005 and this feature is sometimes suggested as a roadway improvement to increase its efficiency (PENNDOT's Tier III A.1).

In the case of County Line Road, where nearly every property maintains its own access point along the main roadway, the inclusion of turning movements across travel lanes at any point along the road results in numerous conflict points and a more dangerous corridor.

In an effort to increase safety and efficiency of this section of the corridor, several access management related improvements were suggested for the area between Bergey Road and Line Lexington Road. To decrease the number of conflict points, the addition of a non-traversable median with median breaks at traffic signals is suggested (Tier III A.3). While all turning movements would be permitted at traffic signals, only right turns would be allowed at other driveway locations.

To compensate for the loss of opportunities for crossing County Line Road, parallel and perpendicular public service streets were envisioned to expand and enhance connections along the corridor (Tier III A.2). The addition of three public streets that meet with County Line Road in Montgomery County, and one street on the Bucks County side of the roadway, would further connect the current street network and ensure easy access to parcels. One new street in Montgomery County would be aligned with Church Street (Bucks County), while the existing Sandstone Drive would be extended to meet with County Line Road. The third street, located between Sandstone Drive and Orvilla Road, would intersect County Line Road and continue into Bucks County. On the Bucks County side, this public street would be located between Mill Road and Swartley Road. These additional roadways would also serve as primary access for new developments as the area continues to grow.

Currently there are five signalized intersections along the case study corridor. A new signal may be added at Bergey Road due to the specifications of the PA 309 Connector Project. Another project proposes to remove the current traffic signal at Line Lexington Road and move it approximately 1,000 feet south on PA 309 to a new connection between PA 309 and County Line Road. While both of these additions are related to other projects, they are still included in DVRPC's summary of the conceptual plan since they may affect access along the corridor. Staff recommended the inclusion of two additional traffic signals along the corridor — one at Church Road and one at the newly proposed public street between Mill Road and Swartley Road. Also suggested is the removal of the signal at Unionville Pike. This signal plan will allow for signal spacing of about 3,000 feet, which is the recommended spacing for a 40mph principal arterial such as County Line Road (Tier II B.2). The deliberately placed signals will also allow for convenient access to current development as well as future guided development.

Staff also suggested many joint driveways and cross accesses between properties, which would limit the number of access points without impacting convenience (Tier I A.6). In all, the conceptual plan resulted in the closure of forty-two driveways with modified internal connections in order to maintain a comparable level of access. Three driveways were also added along the corridor. This conceptual plan would increase the driveway spacing along County Line Road to about 400ft-600ft, which is the suggested separation in the Model Access Management Ordinances (Tier II B.1).

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## 5 CONCLUSIONS

In this case study corridor municipal accident data was used in conjunction with available PENNDOT information, including PENNDOT's Model Access Management Ordinances. While this data collection and organization effort is much more time consuming than using the PENNDOT data, the resulting details are sometimes necessary and worth the time spent.

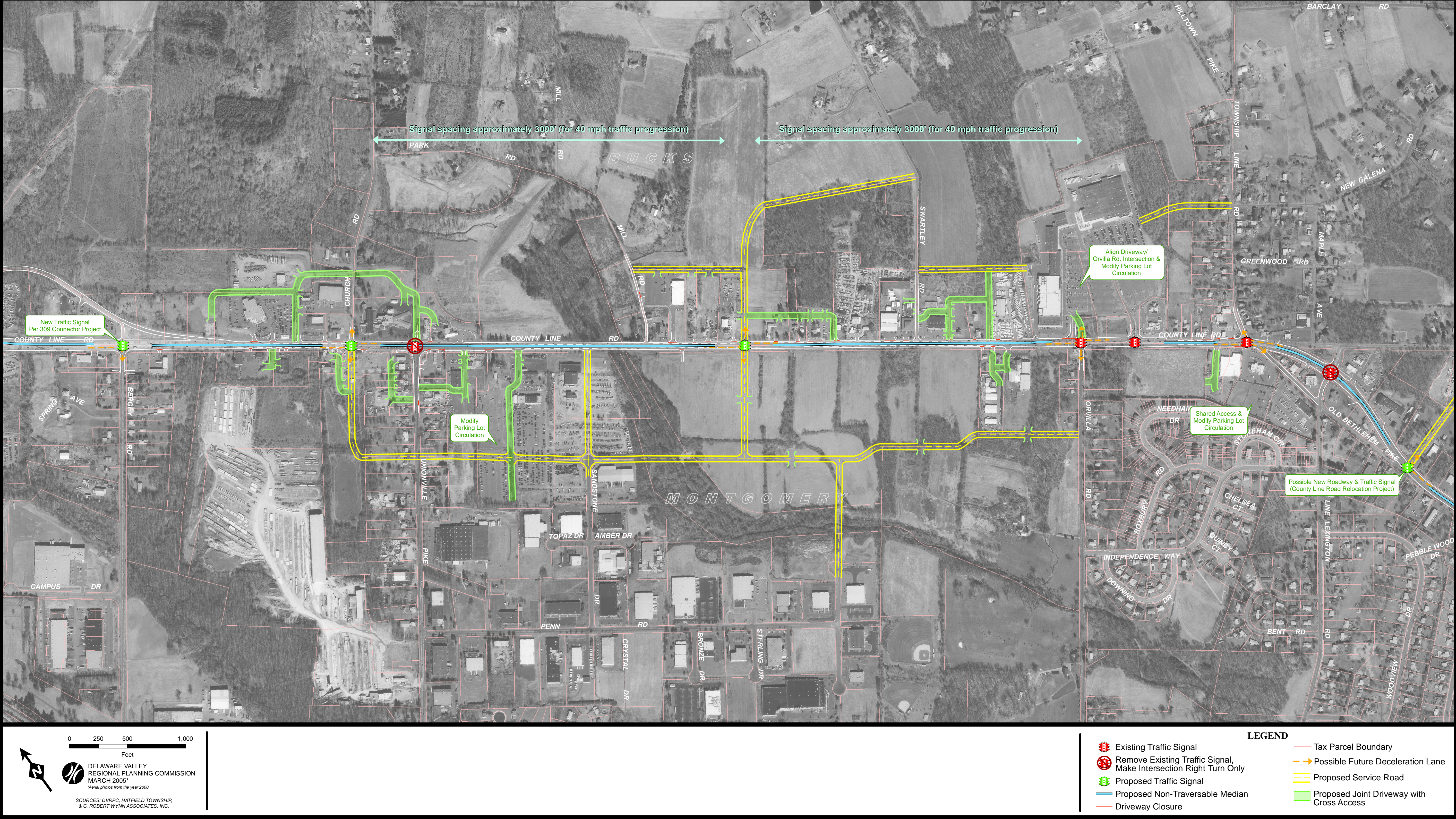
The County Line Road case study corridor is just one example of the potential impact of access management. This case study focuses on a developing suburban landscape, which presents many opportunities to implement substantial change through the land development review and approval process versus the more difficult retrofit approach. While some of the strategies suggested, such as adding traffic signals and public roadways, are substantial, their implementation does not have to be overwhelming. Small progressive changes can be made over time, with the final vision in mind, to ensure that improvements increase the efficiency of the roadway rather than invite rapid community alterations. The ideas and recommendations in this report are suggestions. It is hoped that the County Line Road corridor conceptual plan's proposals will foster coordination between municipal leaders, PENNDOT personnel, and the development community. These partners can work together to establish comprehensive municipal plans and land development practices, develop official maps for future roadway rights of way, and locate and design sensible access points along state and local highways in Hilltown, New Britain, and Hatfield Townships.





County Line Road (PA 309) Case Study Corridor

Figure 3:  
Conceptual Highway  
Access Management Plan





# DELAWARE VALLEY REGIONAL PLANNING COMMISSION

## Publication Abstract

<b>Title:</b>	<b>Access Management Along Pennsylvania Highways in the Delaware Valley — County Line Road / PA 309 Case Study Corridor</b>	<b>Date Published:</b>	September 2005
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**Geographic Area Covered:** New Britain and Hilltown Townships in Bucks County and Hatfield Township in Montgomery County, Pennsylvania.

**Key Words:** Access Management, congestion management, safety, accident mitigation, corridor planning, model ordinance, growth management

## ABSTRACT

This project was created in support of PENNDOT's effort to establish model access management ordinances for use by municipalities statewide. Two corridors were selected as case studies to help PENNDOT illustrate the possible benefits of proactive access management implementation. This corridor report highlights County Line Road between North Wales Road and the Sellersville Bypass (the second case study focuses on City Avenue / US 1). The work was preformed with the help of member governments, regional transportation providers, and PENNDOT.

The project began with the documentation of existing conditions along the County Line Road corridor. Access management related problem areas and specific issues were identified and studied in further detail. Recommendations to improve the congestion and safety concerns along the corridor were based on PENNDOT's statewide model access management ordinances.

A theoretical conceptual plan was prepared as a result of these recommendations and a map of these suggestions is included in this report. Additionally, this conceptual plan acted as a base for the interactive exercise that PENNDOT included in their access management model ordinance statewide training sessions.

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