



**Route 130/Delaware River Corridor Extension**  
**Route 206/Farmbelt Corridor**  
**Transportation and Circulation Study**



Delaware Valley Regional Planning Commission

**June 2003**





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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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## **1.0 EXECUTIVE SUMMARY**

Burlington County is in the process of developing a strategic plan for the northeastern region of the county. This is the transportation and circulation element of the plan which includes the northern section of US 130 where it approaches and intersects with US 206 in Bordentown, as well as US 206 from Bordentown Township in the north to Southampton Township in the south. While the US 130 and US 206 corridors are the focus of this study, an areawide analysis was done of the adjacent transportation network impacted by the primary corridors.

The study process included multi-agency field views to review transportation problem locations for inclusion into the study. DVRPC staff subsequently engaged in detailed follow-up field views and technical analysis to quantify the identified transportation problem areas and document practical solutions. Problems identified included absence of or inadequate turning lanes, need for additional through lane to reduce congestion, need for wider shoulders and traffic calming measures. The majority of recommended improvements are low cost system enhancements aimed at maintaining or improving the character of the community.

The DVRPC regional travel simulation model was used to assess future traffic conditions on selected arterials in the study area, and identify facilities that may experience congestion. The model was run under two future scenarios, a historical trends scenario and a cluster development scenario. The first scenario, historical trends, assumes that the corridor will continue to grow based on past trends. The second scenario assumes that development will take the form of cluster development. Both scenarios were based on the DVRPC 2025 population and employment forecasts.

Future traffic projections were analyzed and a measure of congestion (V/C) calculated for 41 highway segments in the US 206 study corridor. The facilities that were analyzed included the primary route, US 206, as well as important parallel and intersecting routes. The results of the trend scenario suggest that most segments of the major and minor arterials in the study corridor (71% of roadway mileage) will experience no congestion or light to moderate congestion. But some segments of major arterials will experience heavy to severe congestion.

2025 forecasted traffic congestion on US 206 is expected to vary by location. Most sections of US 206 where congestion is forecasted to be heavy to severe are adjacent to significant east-west arterials, including NJ 70, CR 530, and CR 630. The congestion on these sections of US 206 will be caused partly by congestion on intersecting routes. Congestion on Rising Sun Road, west of US 206, is also forecasted to be heavy to severe partly due to an expected increase in truck traffic.

The results of the cluster development scenario suggest that cluster development has the potential to significantly alter travel patterns in the study corridor. Cluster development would also have an overall positive impact on congestion reduction.

The US 206 corridor traverses Burlington County's farm belt. With the county's assistance, several farms have been permanently preserved for agricultural use under the county's farmland preservation program, while others are in the pipeline. Although sections of the road network

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currently are adequate to accommodate farm vehicles, there are key sections in which mobility is constrained due to roadway configuration, volume and impediments in the right-of-way. Problems in farm vehicle mobility also translate to congestion for other vehicles. Through discussions with the farming community as well as field views, deficiencies, both corridor-wide and at specific key locations, were generally identified. These include bridges and culverts on the road network that have weight restrictions, as well as insufficient lane or shoulder capacity. With the participation of the local farmers, a preliminary agricultural route network was identified to target improvements that would facilitate the mobility of farmers and farm related traffic. US 206 extending from Mansfield Township to Southampton Township is the most important section of this agricultural route network largely because it is the primary north/south route within the corridor of regional significance. The number of lanes (4 in several segments) and wide shoulders for the most part make it preferred by farmers for the movement of their farm equipment. Other important linkages to this network include sections of CR 528, CR 537 CR 630, CR 660 and CR 670. Most of these routes intersect with US 206. This report provides a framework for identifying specific improvements in the future.

Due to the rural and suburban character of the corridor, densities do not exist that would justify extensive transit service. As a result, transit primarily serves as a connector between major employers and regional centers. With the exception of McGuire Air Force base, the airports in the corridor provide either a reliever function or are primarily used for general aviation. There are several existing or proposed pedestrian and bicycle facilities in the corridor that provides recreational as well as alternative transportation opportunities.

This report includes a strategic implementation plan for the corridor which is based upon the land use scenarios, the transportation needs and the economic development strategy, in conformance with the policy goals and objectives of the New Jersey State Plan, DVRPC's Horizons: 2025 Land Use and Transportation Plan, and local municipal plans. This implementation plan includes a definition of the roles and responsibilities of all affected agencies for each improvement project. In summary the *Route 130/Delaware River Corridor Extension Route 206/Farmbelt Corridor Transportation and Circulation Study* can be used as a dynamic long range tool for the systematic selection of projects to create a significantly improved transportation system within the study area.

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## **2.0 BACKGROUND**

Burlington County is in the process of preparing a strategic plan that addresses redevelopment issues, growth and development pressures, and rural and farmland preservation concerns in the northeastern region of the county. The county is desirous of avoiding the detrimental impacts that suburban sprawl has on rural areas, which exist within the county, by creating a blueprint and action plan for smart growth that balances growth and development with preservation in this region of the county. The study region comprises the following thirteen municipalities: Bordentown City, Bordentown Township, Chesterfield Township, Eastampton Township, Fieldsboro Borough, Mansfield Township, New Hanover Township, North Hanover Township, Pemberton Borough, Pemberton Township, Southampton Township, Springfield Township and Wrightstown Borough (See **Map 1**). While the US 206 highway is the dominant facility in the corridor, other parallel and intersecting streets were analyzed as they do impact US 206 directly or indirectly. In this regard, the study area is more extensive than the Route 130/Delaware River Corridor which was completed in 1998.

A critical component of this strategic plan is the transportation and circulation element. In preparing this element, the county utilized the approach that was applied in developing the plan for the Route 130/Delaware River Corridor. The extension of the Route 130/Delaware River Corridor and the Route 206/Farmbelt Corridor is consensus-based, developed with input from the corridor communities and various state and regional agencies. From the start, the steering committee members (consisting of Burlington County Department of Economic Development and Regional Planning, Burlington County Engineering Department, municipal representatives, NJDOT and DVRPC) participated in the development of this report through meetings and field views. Steering committee members were involved in the original field views to identify potential locations for inclusion in the study. DVRPC Staff subsequently engaged in detailed follow-up field views of the area. This effort included coordination, problem identification, data collection and analysis, and development of a strategic implementation plan for the corridor. This strategic implementation plan is based upon the land use scenarios, the transportation needs and the economic development strategy, in conformance with the policy goals and objectives of the New Jersey State Plan, DVRPC's Horizons: 2025 Land Use and Transportation Plan, and local municipal plans. This implementation plan also includes a definition of the roles and responsibilities of all affected agencies for each improvement project.

Throughout the process, the county provided valuable information as well as facilitated a process of information sharing and review with representatives of corridor municipalities.

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### **3.0 CORRIDOR DESCRIPTION**

The Route 130/Delaware River Corridor Extension Route 206/Farmbelt Corridor covers an area of approximately 238 square miles, encompassing 13 municipalities of diverse economic and spatial characteristics. The northwestern corner of the study area has a dense network of highways carrying large volumes of regional traffic. The eastern portion of the corridor is largely rural with few roads serving a regional function. Traffic volumes in the eastern section of the corridor are low , largely as a result of low densities and large acreage devoted to agriculture and open space. Highways with the highest volumes are generally those with a high percentage of regional traffic. There are seasonal variations on highways with a regional function as they often acts as major conduits to the NJ shore communities in the summer months. The spine of the corridor is US 206 which runs from north to south in the western half of the corridor. This highway, while serving a largely regional function, also provides access to the local road network.

The primary mode of transportation within the corridor is by automobile. Transit consists of limited bus transit service which is concentrated in the western and southern areas. These are primarily regional service with local service provided by Burlink, the County operated bus service. Rail service (Southern New Jersey Light Rail Transit System) is planned for the northwest corner of the study area in 2003. This will be the only passenger rail service in the area.

The settlement pattern is a mixture of older communities and newer subdivisions. The area to the east of US 206 is mostly agricultural with scattered villages and hamlets. The residential density increases to the west of US 206 where tract housing predominates in places such as sections of Mansfield and Eastampton Townships. A large percentage of the land area is occupied by the military bases in New Hanover and Wrightstown, whose activities affect the circulation and mobility of motorists in these and other nearby towns.

This corridor is the cradle of Burlington County's farm belt. With the County's assistance, more than 15,000 acres of farmland have been preserved through the County's farmland preservation program, while more acquisitions are in the pipeline. Transfer of development rights is one method used to preserve agricultural lands and maintain the corridor's rural character. The process of planned growth, following the model established in the NJ State Development and Redevelopment Plan, has targeted growth to the proposed Regional Center of Mount Holly-Eastampton-Hainsport-Lumberton-Westampton, Towns such as Bordentown City, Villages such as Vincentown and Hamlets such as Sykesville.

### **3.1 Highway Network**

The Route 130/Delaware River Corridor Extension, Route 206/Farmbelt Corridor is served by several highways of varying functional classification ranging from local roads to interstate highways. The principal routes are as follows:

1. The New Jersey Turnpike crosses the northernmost half of the region. It is a major toll road which extends the length of the state from north to south and is a vital artery for interstate commerce. It has one interchange (Exit 7, Bordentown) within the study area and three other interchanges (Exits 5, 6 and 7A) nearby.
  2. Interstate 295 which parallels the Turnpike for much of its length, is also a major commercial artery with four interchanges within the study area.
  3. US 206 forms the spine of the corridor and is the primary north-south route serving the area. The section of this road under study extends from Bordentown in the north to Southampton Township in the south. This road is primarily a two-lane mixed-use facility with a high percentage of heavy vehicle traffic, daily commuters, farm related traffic as well as seasonal and recreational traffic destined for the Jersey Shore. The surrounding land uses also vary with long stretches of farmland, small towns, residential development, and areas of commercial and retail development.
  4. US 130 bisects the corridor in the far northwestern section. It is an Urban Principal Highway and generally has four travel lanes and grass center median.
  5. NJ 68 is an important link which provides a direct connection between the McGuire AFB/Fort Dix military complex with US 206. It also provides an alternative route to US 206.
  6. NJ 38 is an important east-west connector which, in tandem with CR 530, connects the urban areas of Pemberton Borough and Mount Holly.
  7. NJ 70 is a major access route to the Pinelands and the shore communities. Peak volumes on this road historically varies with seasonal demand.
  8. There are several county roads in the study area which provide an important regional function. A primary example is CR 537 which provides direct east-west access within the study area and is also an important link to the shore communities. CR 545 provides an important link between Wrightstown and communities to the south. It has been closed to non-base related traffic for security reasons since the fall of 2001. This closure has disrupted traffic patterns, adding many more miles to commuters trips as they seek alternate routes. This has also affected the economic life of Wrightstown as a result of the reduced accessibility.
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### 3.2 Traffic volumes

This analysis is based on existing traffic count data gathered from two database sources: DVRPC and NJDOT. The level of detail of the analysis is limited by the data available within the study area. The traffic counts are expressed as annual average daily traffic (AADT). These numbers, derived from the sum of 24 hour automatic traffic recorder (ATR) counts normalized by an applied factor, represent the average number of vehicles at that location on any given day of the calendar year. Peak hour counts would require manual counting which is outside the scope of this study. An analysis of seasonal volumes was not possible as this would require a series of counts over time.

The purpose of this analysis is to compare the disparate volumes at various locations along US 206, to note the influences of parallel and perpendicular routes, and to recognize regional travel trends.

Many different classes of roadway traverse the corridor including interstate, turnpike, US routes, state routes, county and local routes. In order to best describe the varying traffic volumes throughout the study area the analysis is divided into three geographic areas: Northern, Central and Southern (see **Map 2**). The Northern area focuses on the facilities located to the north and west of the NJTPK, including the turnpike. This area is unique in the study corridor due to the proximity of many regional and interstate facilities and their interchanges (i.e.: I-295, NJTPK, US 130, US 206). The Central area, roughly between the turnpike and NJ 38, refers to the mid section of the US 206 corridor where fewer regional routes traverse, with the exception of CR 537. The Southern area is the remaining section of the corridor from NJ 38 to NJ 70. Both of these state routes are important facilities for moving vehicles to and from the US 206 corridor.

#### **Northern Area**

The highest volumes in the study area were recorded in the northern section where US 206, US 130, The New Jersey Turnpike (NJTPK), and Interstate-295 (I-295) converge in the Bordentown area. On US 130 south of the Farnsworth Avenue intersection, an annual average daily traffic (AADT) of 30,604 was recorded in 2000. On the north side of this intersection the volume on US 130 drops off to 23,440 during that same year. This higher volume on US 130 between I-295 and Farnsworth Avenue can be attributed to I-295 traffic exiting at US 130 en route to US 206 and other facilities within the vicinity. Further north beyond its split with US 206, US 130 remains consistent at 23,550 (2000 AADT).

The highest traffic volume on US 206 (29,214 in 2002) was recorded between CR 660 Old York Road and the NJTPK entrance. On the north side of the Turnpike the volume on US 206 drops to 21,538, recorded that same year. The difference between these two AADTs can be attributed to truck traffic connecting to the turnpike from I-295 northbound Exit 55 via Rising Sun Road and Old York Road. A full scale truck stop located on this stretch of Rising Sun Road makes this route particularly attractive for truckers. Rising Sun Road, a local facility improved to better accommodate trucks, had an AADT of 16,698 in 2003. Just north of Exit 55 an AADT of 46,164 was recorded on I-295 in the year 2000. The only available count for NJTPK was 62,300 recorded in 2000 near the municipal boundary between Mansfield and Springfield Townships. Other volumes of significance in this section of the study area include 5,770 (2002 AADT) on CR 528 Bordentown-

Chesterfield Road; and 7,852 (2000 AADT) on CR 545 Farnsworth Avenue. Both of these counts were taken east of US 206 and reflect travel patterns between the eastern municipalities of Burlington County and the principal arterials which traverse the western portion of the study area.

### **Central Area**

Approximately one half mile south of the NJTPK, US 206 intersects with the northern terminus of NJ 68 in Mansfield Township. The volume along US 206 drops to 20,160 (2001 AADT) near the intersection of East and West Mansfield Roads and fluctuates between 15,570 (2002 AADT) at a location south of CR 669 to 18,456 (2002 AADT) closer to the NJ 38 intersection. CR 543 Mount Pleasant Road shows widely varying AADTs with 11,304 west of US 206 and 4,382 east of US 206, both recorded in 2003. The higher volume west of US 206 can be attributed to traffic bound for the Columbus Market from I-295 Exit 52. NJ 68, an important facility connecting US 206 with the Fort Dix military installation, had an annual average daily traffic of 10,680 recorded just south of US 206 in the year 2000. Closer to the military base an AADT of 6,136 was recorded on NJ 68 in 2001. Another important facility within the central portion of the study area is CR 537 Monmouth Road. CR 537 carries both local and regional traffic and is the main east-west facility north of NJ 70. On the west side of its intersection with US 206 an AADT of 9,439 was recorded in 2003 and 9,670 in 2002. Further east beyond NJ 68, an AADT of 7,065 was recorded in 2000.

### **Southern Area**

Moving south, the next major intersection along US 206 is with NJ 38. NJ 38 is a minor arterial which carries traffic between Burlington County and western Camden County where it merges with US 30 near the Ben Franklin Bridge. Two AADTs, 25,252 in 1999 and 25,520 in 2000, were recorded on NJ 38 in Southampton Township west of US 206. An AADT of 13,830 was recorded on US 206 in 2000 near the intersection of CR 681. Volumes along US 206 gradually increase moving southward. An AADT of 17,669 in the year 2000 was recorded on US 206 in Southampton Township. At the southern tip of the study area NJ 70 intersects with US 206 at the Red Lion Circle. NJ 70 is an important rural principal arterial carrying regional traffic between the Delaware River and the New Jersey Shore. On the west side of the circle, an AADT of 17,124 was recorded in 2001. In that same year an AADT of 18,930 was taken on the east side of the circle.

### **Findings**

The data presented here suggests that US 206 is used as both a regional facility serving north-south traffic and as a connector to one of the regional or interstate facilities that traverse the study area. The highest volumes on US 206 are in Bordentown Township where connections to I-295 and the NJTPK can be made. Other high volume locations are located in proximity to NJ 38 and NJ 70.

When considering improvements to the transportation infrastructure and/or land developments, a more detailed traffic count analysis should be performed to assess existing conditions versus projected change.

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### 3.3 Accident Analysis

#### **Accident Data**

This analysis utilizes data from the New Jersey Department of Transportation Bureau of Safety Program's Accident Records Database. The data set used for this report focuses on US 206 within the study limits for the years 1999-2001 which is the most current year data available.

#### **Accident Overview of Study Area**

**Map 3** depicts the location and severity (fatal, injury, property damage only) of all accidents on all routes within the study area, with the exception of local streets, for the year 2001. This map is provided to give an area-wide perspective of potential problem locations for further analysis.

#### **Accident Summary for US 206**

Accident data was compiled for US 206 between mile post 16.29 to 38.46, approximately 22 miles from Southampton Township to Bordentown Township. During the three year period of 1999 to 2001 there were 934 accidents recorded at 286 locations along this stretch of US 206. Concerning accident severity, 68.2% (637) were property damage only, 31% (290) were injury accidents, and 0.7% (7) fatalities. Each of the 7 fatal accidents occurred at different locations, 2 of which occurred in accident cluster locations in Springfield and Southampton Townships (see below). Fatal accidents are commonly associated with higher speeds.

According to the New Jersey Department of Transportation (NJDOT), rear end and sideswipe collisions involve traffic moving in the same direction. Angle crashes involve angular traffic (north and west, etc.) and left turn and head-on events involve opposing traffic. Rear end collisions, the highest percentage in this corridor accounting for 36.8% (344) of the total, tend to be more common on roads where dedicated left turn lanes are not provided. This situation may also contribute to sideswipe accidents due to weaving between lanes in an attempt to avoid vehicles queuing to turn left. Sideswipe accidents accounted for 11.2% (105). Angle crashes, 18.2% (170) of the total, may indicate restricted sight distance. Left turn accidents were 5.2% of the total with 49 incidents. Accidents in the "other" category, which relates to incidents involving animals, fixed objects, overturned vehicles, and pedestrians, among others; accounted for 24.8% (232).

NJDOT considers an accident to be "at intersection" when it occurs 30 feet or less from the center of the intersection. Crashes outside of this area are considered "between intersections". For US 206 within the study area, the percentage of accident locations is nearly evenly split between "at intersection" accounting for 50.5%, (473) and "between intersections" at 49.4% (463). Concerning lighting and surface condition of the roadway, most accidents occurred during daylight hours (68.1%) under dry conditions (77%). This suggests that other contributing factors may be more significant, such as road geometry, sight distance, or driver behavior, etc.

An analysis of vehicle type was not performed. In addition, NJDOT's accident records database does not list farm equipment as a category in the vehicle type field.





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### Accident Cluster Locations

For this analysis an accident cluster is considered a location with a three year frequency of 30 or greater incidents. Three locations were found to have met this criteria. The 1999-2001 data set utilized in the Accident Summary section is also used here.

Only two individual mile post locations had an accident frequency of 30 or greater crashes in the three year period: mile post 28.28 at the intersection of US 206 and CR 670 Jacksonville-Jobstown Road, and milepost 26.8 at the intersection of US 206 and CR 537 Monmouth Road. The cluster analysis at US 206 and CR 537 also includes the intersection of US 206 and CR 669 Juliustown Road at milepost 26.67, located approximately 678 feet south of the CR 537 intersection. To remain consistent with the *Problem Location* analysis section of the report the accidents at these two intersections have been analyzed together as a single location. The third location includes mileposts 23.48, 23.49, and 23.50, at the intersection of US 206 and NJ 38/CR 530. This stretch is approximately 157 feet long. The combined accidents of these three mileposts exceeds the minimum threshold for an accident cluster.

The location of the following clusters are illustrated on **Map 4**.

#### Mile post 28.28: US 206/CR 670 Jacksonville-Jobstown Road

Of the 41 accidents at this location for the three year period there were 32 property damage only, 8 injury, and no fatal accidents. Same direction rear end collisions accounted for 31.7% (13) and left turns were 22% (9). A field observation during 2002 revealed that the intersection had been widened to include dedicated left turn lanes in both directions on US 206. An examination of 2002 accident data may show a decline in crashes due to this improvement. (2002 crash data was not available at the time of this analysis)

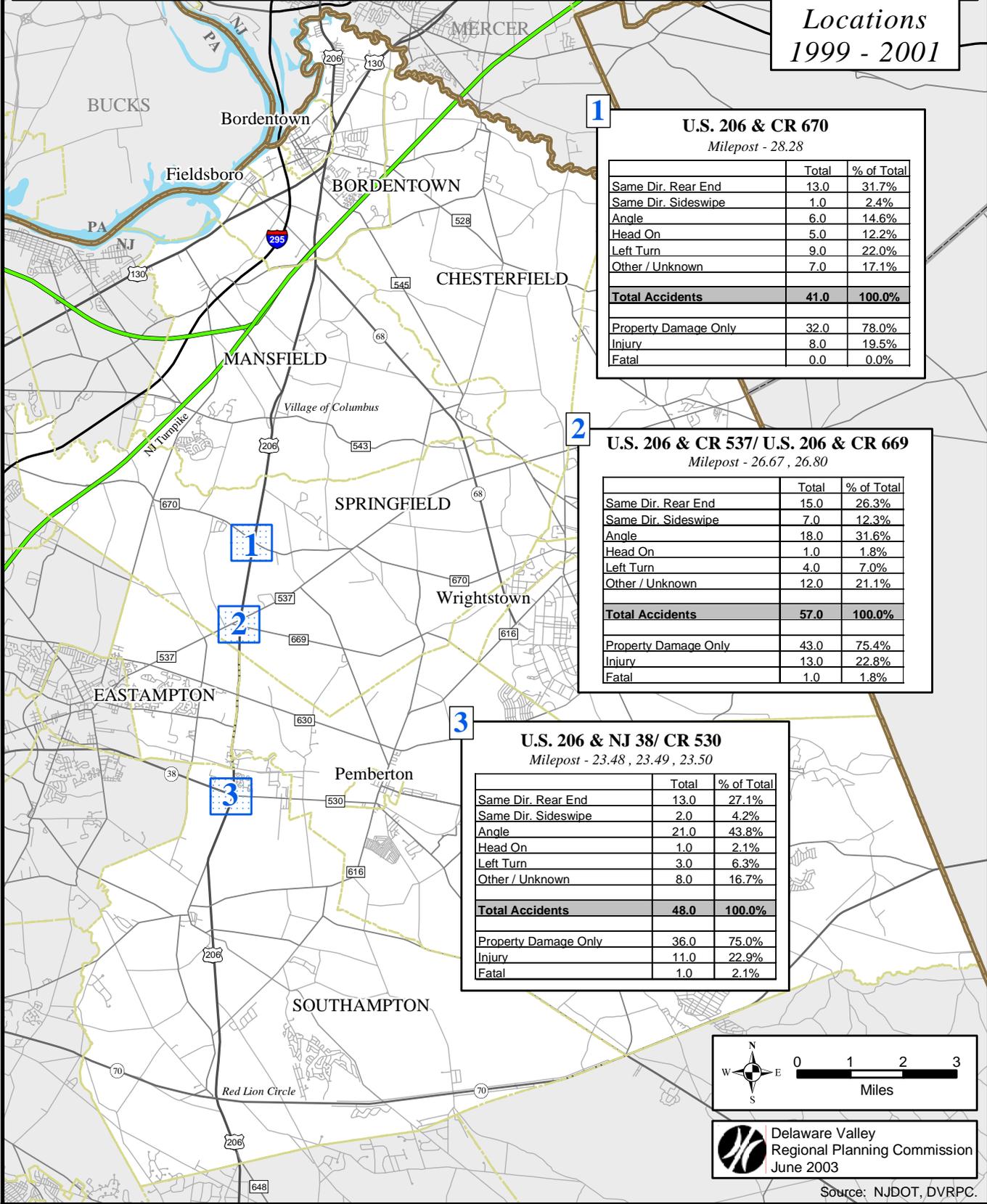
#### Mile post 26.8:US 206 & CR 537 Monmouth Road, Mile post 26.67: US 206 & CR 669 Juliustown Road

There were 57 accidents at this location for the three year period. One fatal accident occurred, 13 injury accidents, and 43 property damage only. Concerning collision type, angle and same direction rear end accidents accounted for the highest percentages at 31.6% (18) and 26.3% (15), respectively. US 206 is two lanes per direction and no left turn lanes on the north side of the CR 537 intersection. On the south side it narrows down to one lane per direction, right at the US 206 and CR 669 intersection. A field observation revealed that vehicles tend to accelerate as they merge in order to gain 1<sup>st</sup> position in the 2 lane section of US 206. This, along with compromised sight distance, in addition to a lack of left turn lanes, could make this location vulnerable to accidents.



# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 4:  
U.S. 206  
Accident  
Locations  
1999 - 2001



**1**

**U.S. 206 & CR 670**  
Milepost - 28.28

	Total	% of Total
Same Dir. Rear End	13.0	31.7%
Same Dir. Sideswipe	1.0	2.4%
Angle	6.0	14.6%
Head On	5.0	12.2%
Left Turn	9.0	22.0%
Other / Unknown	7.0	17.1%
<b>Total Accidents</b>	<b>41.0</b>	<b>100.0%</b>
Property Damage Only	32.0	78.0%
Injury	8.0	19.5%
Fatal	0.0	0.0%

**2**

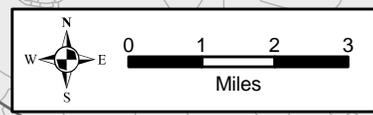
**U.S. 206 & CR 537/ U.S. 206 & CR 669**  
Milepost - 26.67, 26.80

	Total	% of Total
Same Dir. Rear End	15.0	26.3%
Same Dir. Sideswipe	7.0	12.3%
Angle	18.0	31.6%
Head On	1.0	1.8%
Left Turn	4.0	7.0%
Other / Unknown	12.0	21.1%
<b>Total Accidents</b>	<b>57.0</b>	<b>100.0%</b>
Property Damage Only	43.0	75.4%
Injury	13.0	22.8%
Fatal	1.0	1.8%

**3**

**U.S. 206 & NJ 38/ CR 530**  
Milepost - 23.48, 23.49, 23.50

	Total	% of Total
Same Dir. Rear End	13.0	27.1%
Same Dir. Sideswipe	2.0	4.2%
Angle	21.0	43.8%
Head On	1.0	2.1%
Left Turn	3.0	6.3%
Other / Unknown	8.0	16.7%
<b>Total Accidents</b>	<b>48.0</b>	<b>100.0%</b>
Property Damage Only	36.0	75.0%
Injury	11.0	22.9%
Fatal	1.0	2.1%





Mile posts 23.48, 23.49, 23.50: US 206 and NJ 38/CR 503

This intersection was the site of 48 accidents between 1999 and 2001. Of the total there was one fatal, 11 injury, and 36 property damage only accidents. Angle accidents were the most common type accounting for 43.8% (21). Rear end accidents were the second highest collision type at 27.1% (13).

### **3.4 Agricultural Routes**

Burlington County has 12.5% of New Jersey farmlands and its 857 farms ranks it second in the state with the number of farms. In the US 206 corridor, there are 13 municipalities, 11 of which have significant acreage under farmland assessment taxation. The remaining two municipalities are urbanized areas with no land in agriculture. Based on 2000 farmland assessment data, approximately 68,000 acres within the corridor are actively dedicated to agriculture. The US 206 corridor accounts for 63% of harvested cropland in the county, 50% of cropland pastured in the county and 59% of permanent pasture land in the county. Agriculture within the corridor is therefore a major force in the economic viability of the region.

Transportation programs and initiatives, some of which have not been traditionally viewed as vital to agricultural development, should be advanced to accommodate this economic sector. Adequate highway infrastructure is necessary to facilitate mobility of farm equipment between farms, as well as to accommodate goods movement to and from farms. In recognition of this, an agricultural route was identified which represents the preferred transportation route by farmers in the area. (See **Map 5**). By recognizing and upgrading this route where needed, the mobility of farmers and farm related traffic will be improved.

#### **Delineation of Agricultural Routes**

Burlington County, DVRPC and representatives of the farming community, working in a coordinated effort, developed an agricultural route within the US 206 corridor. This was accomplished by first identifying the transportation problems encountered by farmers in transporting their equipment from farm to farm. Next, the route that is currently being used by farmers was identified. This route was compared to what farmers identified as the preferred travel route, i.e. modifications to the current network that would improve mobility. This include improvement to the infrastructure of adjacent roadways that would make them superior to the current route in terms of travel time and maneuverability.

As can be seen from **Map 5**, US 206 extending from Mansfield Township to Southampton Township, is the most important section of the agricultural route network. This is the most important artery largely because it is the primary north/south route within the corridor of regional significance. The number of lanes (4 in several segments) and wide shoulders for the most part are able to accommodate most farm equipment. Other important linkages to this network includes sections of CR 528, CR 537, CR 630, CR 660 and CR 670. Most of these routes intersect with US 206.

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Although sections of the network currently are adequate to accommodate farm vehicles, there are key sections in which mobility is constrained due to roadway geometrics, volume and impediments in the right-of-way. Through discussions with the farming community as well as field views, the following deficiencies were noted which exists corridor-wide or at specific key locations.



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## **Deficiencies**

- On secondary roadways in particular, impediments such as drainage ditches, roadside delineators, mailboxes and utility poles often make travel on the shoulder difficult. This is of special concern to farmers who sometimes travel on the shoulder with their equipment to minimize disruption of the general traffic stream.
    - Drainage ditches are located parallel to the roadbed and are designed to accommodate storm water runoff from the right-of-way. However, ditches that are too deep impede the ability of wide width farm equipment to travel off-road for a short distance and permit traffic to pass.
    - Roadside delineators are light-retroreflecting devices mounted on posts in a series to indicate obstructions or hazards within or adjacent to the roadway. They are used to guide drivers along the roadway path, particularly at night, under adverse weather conditions. These are of particular importance on rural roads that do not have enough traffic to justify installation of roadway lighting systems. According to the Manual on Uniform Traffic Control Devices (MUTCD), delineators should be placed not less than two or more than eight feet outside the outer edge of the shoulder. This however is sometimes within the pathway of farm equipment. The result is these devices are sometimes run over. A solution to this is to identify locations where delineators are often hit and replace them with flexible post delineators. These can withstand numerous vehicle impacts at various speeds and return to their original upright position.
    - Mailboxes and utility poles are obstructions that can impede mobility. While mailboxes for the most part breakaway easily with little damage to vehicles, utility poles poses a greater danger. The placement of utility poles is guided by access issues, provision of services, costs and institutional constraints. It is recommended that at accident prone locations, the feasibility of relocating utility poles should be examined.
  - Trees and shrubbery often encroach on the shoulders and in effect, reduce visibility and safety. Farm equipment using the shoulder sometimes becomes entangled in foliage. By trimming back vegetation within the right-of-way, visibility and safety can be improved.
  - There are several bridges and culverts on roadways on the road network that have weight restrictions. Since some farm equipment and trucks with farm products often exceed these limits, these vehicles have to avoid those locations. An analysis should be done on all bridges and culverts within the farm belt to determine whether their weight restrictions are adequate.
  - US 206 in some places has two travel lanes in each direction while in others it has one in each direction. This inconsistency oftentimes lead to weaving as traffic adjust to the roadway configuration. The effectiveness of increasing shoulder width should be considered prior to lane expansion.
  - Heavy truck volumes interfere with the mobility of farm equipment. This problem is most severe in the vicinity of US 206 and Old York Road in Bordentown. A connection from I-295 and NJ Turnpike would alleviate truck traffic from the arterials.
-

### **Agricultural Routes Recommendations**

While a potential agricultural route network has been defined, there should be an ongoing process of refining and improving this network in an effort to make it more responsive to the needs of the agricultural community. This process should include review and input from relevant agricultural groups, the affected municipalities and relevant state agencies prior to official adoption by the Board of Chosen Freeholders. In addition, when highway improvements are planned on the designated road network, the following checklist should be considered for implementation:

- Shoulders should be widened to a minimum of 8 feet where appropriate to accommodate farm equipment.
  - Identify locations where roadside delineators are often hit and replace them with flexible post delineators. These can withstand numerous vehicle impacts at various speeds and return to their original upright position.
  - Mailboxes and utility poles should be set back 8 feet or more from the pavement, where possible, to minimize conflict with vehicles.
  - Drainage ditches should be set back 8 feet or more from the pavement, where possible, so as to minimize vehicular conflicts. The gradient and depth should be sufficient to accommodate storm water runoff but at the same time, not pose a hazard to vehicles using the shoulder.
  - Vegetation within the right-of-way should be trimmed back to improve visibility and safety.
  - Bridges and culverts within the farm belt should be upgraded to accommodate vehicles with higher tonnage.
  - Construct pull-offs at strategic locations to minimize impact on through traffic.
  - Erect farm machinery signage at strategic points along the route to define the route to motorists and increase their awareness that they are in a farm community.
  - Where appropriate, a wider shoulder should be considered first as a method of increasing capacity rather than an additional lane. An additional lane generally attracts more traffic as well as an increase in speeding.
-

### 3.5 Transit Service

As **Map 6** illustrates, the study area is not very well served by transit. This is partly due to the rural and suburban character of the area. Densities which would make transit viable are dispersed throughout the area in urban pockets. Regularly scheduled bus service in the area is provided by New Jersey Transit and BurLink, a bus service provided by the Burlington County Board of Chosen Freeholders. NJ Transit operates the #409 and the #317 bus out of Philadelphia.

#### NJ Transit Bus

NJ Transit operates the #317 bus from Asbury Park via Fort Dix to Philadelphia and the #409 bus from Trenton via Bordentown to Philadelphia.

There are eight #317 buses operating from Philadelphia PA to Asbury Park NJ on weekdays. A ninth bus operates from the City of Camden to Asbury Park. Major destinations served within the study area include Pemberton, Browns Mill, Fort Dix and Wrightstown. The average travel time from Philadelphia to Asbury Park is approximately 3 hours and 47 minutes. For the return leg, the travel time is approximately 3.5 hours. The hours of operation from Philadelphia are from 4:53 am to 7:40 pm. On the return leg, the first bus leaves Asbury Park at 7:53 am while the last bus leave at 9:35 pm. However, the first bus to Philadelphia from McGuire Air Force Base departs at 5:35 am.

The #409 bus serves the westernmost section of the study area between Philadelphia and Trenton. There are 45 weekday departures from Philadelphia. However, only 22 buses continue all the way to Trenton via Bordentown. In the reverse direction, 20 buses depart from Trenton via Bordentown to Philadelphia. The average travel time from Philadelphia to Trenton varies from 2 hours and 11 minutes to approximately 2.5 hours. On the return leg, the travel time is approximately 2 hours and 14 minutes. The hours of operation from Philadelphia are from 5:27 am to 10:48 pm. On the return leg, the first bus leaves Trenton at 6:10 am, while the last bus leaves at 11:10 pm.

#### Southern New Jersey Light Rail Transit

According to NJ Transit, the Southern New Jersey Light Rail Transit System will provide new light rail transit service from Trenton to Camden along the Delaware River. The line runs roughly parallel to Route 130 and traverses the study area communities of Bordentown Township, Fieldsboro Borough and Mansfield Township. Advanced, articulated diesel light rail vehicles will travel along an augmented freight right of way. Light rail will operate from 6 a.m. to 10 p.m., seven days a week and freight will operate between 10 p.m. and 6 a.m., six days a week. In addition, access is provided to NJ TRANSIT, Amtrak, SEPTA, and PATCO trains. South Jersey Light Rail has the potential to enhance the region's economic development and increase the personal mobility of residents throughout the Route 130 Corridor. Revenue service is expected to begin in the fall of 2003.

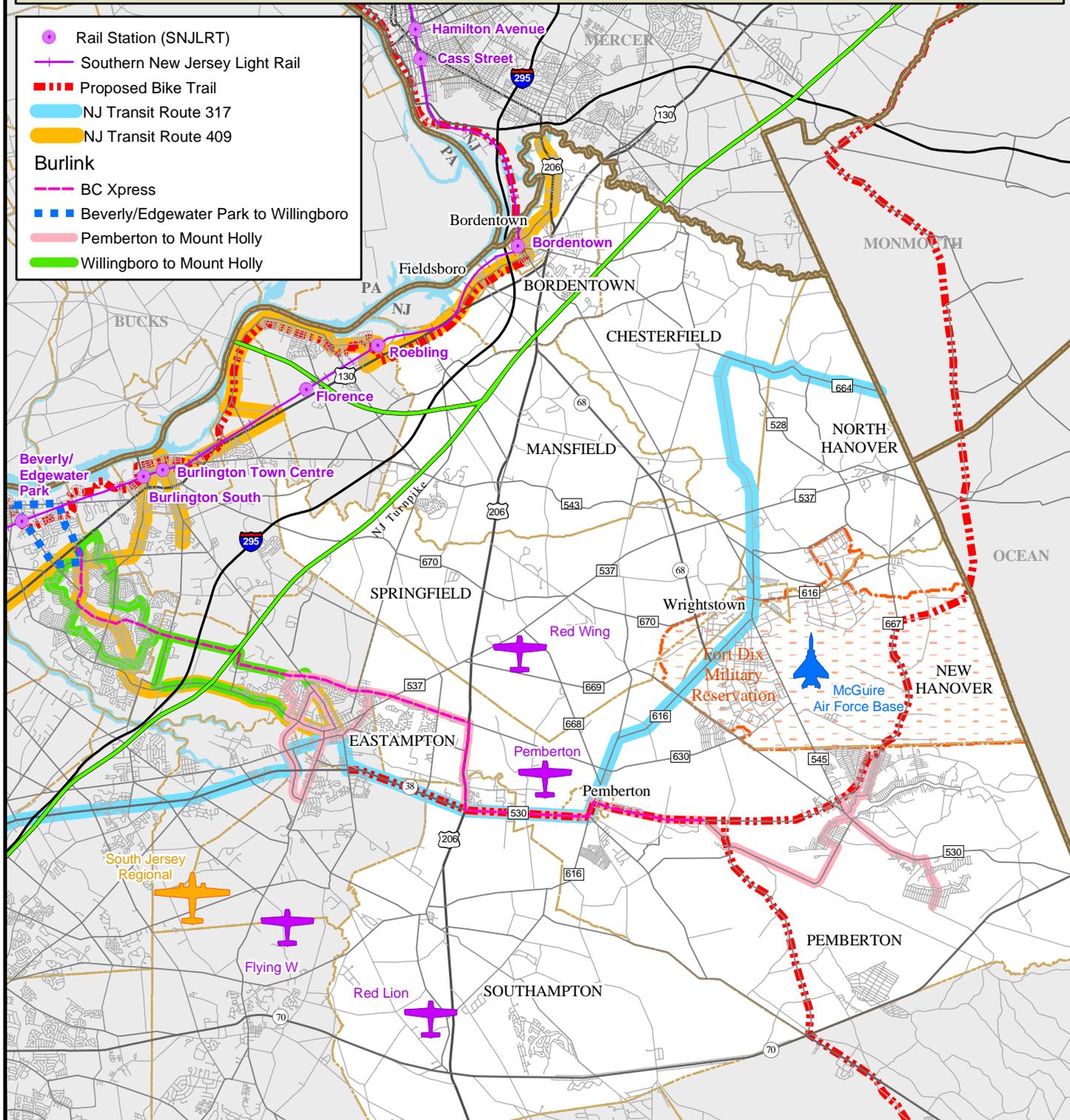
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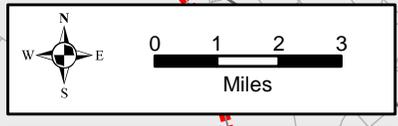
# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 6:  
Transportation  
Facilities

- Rail Station (SNJLRT)
  - Southern New Jersey Light Rail
  - Proposed Bike Trail
  - NJ Transit Route 317
  - NJ Transit Route 409
- Burlink**
- BC Xpress
  - Beverly/Edgewater Park to Willingboro
  - Pemberton to Mount Holly
  - Willingboro to Mount Holly



- Reliever Airport**  
Providing corporate, some charter and personal general aviation services, northeast, regional, and local operations.
- General Aviation Airport**  
Providing limited corporate and charter services, with emphasis on local general aviation services and destinations.
- Military Airport**  
No civilian use



Delaware Valley Regional Planning Commission  
June 2003

Source: NJDOT, DVRPC.



### BurLink

There are four routes operated by BurLink; the Red route, the Green route, the Blue route and BC XPress. Together, they transport approximately 138 riders each day.

The Red BurLink Route operates between Pemberton and Mount Holly. There are seven inbound and seven outbound trips made each weekday between 6:15 am and 8:00 pm. Headways for this route are generally one hour and forty minutes.

The Green BurLink Route operates between Willingboro and Mount Holly. There are 12 inbound and 12 outbound trips each weekday operating between the hours of 6:15 am and 8:00 pm. Headways are one hour except at midday where the headway is two hours.

The Blue BurLink Route operates between Beverly/Edgewater Park and Willingboro. There are 19 round trips that are made each day from the Broad Street/Warren Street terminus. There are 30 minute headways in the AM and PM peak.

The BC XPress provides service between Willingboro and Burlington County College in Pemberton. This route operates only when the college is in session. There are three departures in the AM from Willingboro with the first being at 7:00 am. In the PM there are four departures from Burlington County College with the last departure being at 4:10 pm.

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### **3.6 Aviation Facilities**

There are 5 civilian airports and one military airport in or in close proximity to the study area. The civilian airports are all reliever or general aviation airports. Reliever airports provide a high level of capacity for operation and storage of single engine, twin and small jet aircraft away from the commercial airports. General aviation serve similar general aviation and business traffic. However, they usually have lower volume of users, smaller aircraft or serve market areas where other capacity options exist.

The South Jersey Regional Airport is a reliever airport. It provides corporate, some charter and personal general aviation services to the northeast, regional and local operations. It is located just west of the study area and 25 miles from Center City Philadelphia, in Lumberton. This airport covers an area of 112 acres. In 1999, there were 59,466 total operations (takeoffs and landings) at this airport. Based on DVRPC's 2025 Regional Airport System Plan (RASP), recommended capital improvements for this airport include a runway extension to 5,500 feet, 30 Hangar spaces and 30 T-Hangars. These improvements are estimated at \$8.4 million.

The Flying W is located in Lumberton and Medford Townships just north of NJ 70. Located 25 miles from Center City Philadelphia, this general aviation airport provide limited corporate and charter services, with emphasis on local general aviation services and destinations. In 2001-2002, there were 36,585 predominantly single engine operations. DVRPC's 2025 RASP recommended capital improvement to this airport which would include 20 Hangar spaces and 30 T-Hangars. These improvements are estimated at \$2.5 million.

The Red Lion airport is a general aviation airport, situated on 95 acres, surrounded by farmland in Southampton Township. It handled approximately 13,012 operations in 2001-2002. It has about 65 based, single engine aircraft. This facility has taxi/charter, maintenance, and flight instruction services available, but limited storage and hangar capacity. DVRPC's 2025 RASP recommended capital improvement to this airport which would include 30 T-Hangars at an estimated cost of \$0.9 million.

Pemberton airport, located in Pemberton Township and Red Wing airport, located in Springfield Township, are general aviation airports with turf runways.

McGuire Air Force Base, located in New Hanover, is a major military staging and materiel center on the east coast. It serves as the base for the 438<sup>th</sup> Air Base Group. The military Air Traffic Control (ATC) installation at McGuire, in addition to military operations, handles traffic approaching and departing the civilian airports in the area.

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### **3.7 Pedestrian and Bicycle Facilities and Amenities**

Walking and biking, for many short to mid-length trips, represent alternatives to use of a single occupancy vehicle. There are many trips that can be made by foot or in combination with other modes. In order to integrate pedestrians and bicyclist into the existing transportation systems, the appropriate facilities should be provided. These are influenced by characteristics such as land use, population and transportation patterns. A regional pedestrian/bicycle program should consist of an interconnected system of routes, lanes, paths, and greenways that provides recreational as well as alternative transportation opportunities. There are several existing and proposed pedestrian and bicycle routes and trails in the study area that can provide alternative transportation opportunities.

#### **Delaware River Heritage Trail**

Once completed, the Delaware River Heritage Trail will be a loop trail between Morrisville-Trenton to the north, and Palmyra-Philadelphia to the south. Existing trails within those end points will be used as part of the trail. The intent is to make a land trail available for walking and bicycling as close to the Delaware River as possible. The trail will enter the US 206 study corridor at the Mansfield Township boundary, mostly following Route 130. It will continue on Burlington-Bordentown Road, which becomes 4<sup>th</sup> Street in the Borough of Fieldsboro, and then veer north on Farnsworth Avenue in the City of Bordentown. In Bordentown, connections will be possible to the proposed station of the Southern New Jersey Light Rail Transit System which will commence service in the fall of 2003. After exiting the study corridor, it will enter Delaware and Raritan Canal State Park.

Locating a trail immediately adjacent to the shoreline of the Delaware River will be difficult in many areas because of the natural topography, and because of the presence of heavy industry or private residential property. In these areas, the trail will probably have to be on-road. The riverfront of the Delaware River has been identified by Burlington County as a project area in its Parks and Open Space Master Plan. Burlington County and DVRPC are currently overseeing a scoping study of the section of the route that is in New Jersey.

#### **High Point to Cape May Bicycle Route**

The High Point to Cape May Bicycle Route traverses the center of the State. It will serve as a "spine" that will ultimately expand to a network of bicycle routes and trails reaching across the state to link local bike routes. The High Point to Cape May Route enters the US 206 study corridor at Cookstown, just north of the Fort Dix military reservation. Traveling south from Cookstown through Fort Dix, it enters Browns Mills, and then continues west on CR 530 before heading south on CR 646. It exits the study corridor at Four Mile Circle, where it picks up State Highway 72, and later CR 563.

The *High Point to Cape May Bicycle Touring Route Location Study* evaluated the route segments using the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines. Not all roads along the selected route fully meet "bicycle compatible" criteria. In the future, improvements will be recommended at spot locations or along sections of the route that do not

meet NJDOT guidelines. No formal inventory of the section of the route that crosses the US 206 study corridor appears to have been performed. Yet an informal assessment suggests that most recommended improvements will fall in one of three categories: 1) adding navigation signage, 2) adding or widening road shoulder, and 3) replacing drainage grates with bicycle safe grates.

In addition, cyclists may find some difficulty in negotiating Four Mile Circle to cross Highway 70. The circle roadways are wide and visibility is good, but vehicle traffic enters and exits from three directions. The *Touring Route Location Study* suggests that additional safety measures may be necessary to guide cyclists through the circle, and alert motorists to the presence of cyclists.

### US 206

According to the *Route 206 Bicycle and Pedestrian Compatibility Study Concept Development Report*, "A screening of roadway characteristics conducted as part of the New Jersey Bicycle and Pedestrian Master Plan found that US 206 in the project study area between Hammonton in Atlantic County (MP 0.0) and Route 68 just south of Bordentown in Burlington County was largely pedestrian/bicycle compatible. However, constraints to compatibility exist in a number of locations. The *Concept Development Report*, which was prepared by Frederic R. Harris, Inc. for the New Jersey Department of Transportation, in December 2000, identifies the incompatible sections of Route 206 and develops concepts to improve the compatibility of Route 206. The report also identifies existing constraints to pedestrian compatibility and develops concepts to improve pedestrian accommodation where needed.

Just under 16 miles of the corridor that the *Concept Development Report* considered, running from Red Lion Circle to NJ 68, coincides with the current US 206 corridor study. Most of the incompatible sections have no shoulder or an inadequate shoulder. In most cases, the report recommends widening or restriping the roadway. Restriping the roadway, where it is proposed, would create a three lane section with 1.8 meter shoulders in each direction. In some cases, provision of "Share the Road" signs is recommended until an acceptable bicycle treatment has been provided.

The report also recommends replacing the drainage grate at Powell's Run with a bicycle safe grate. Finally, the report notes that Red Lion Circle is difficult for cyclists to negotiate. The ultimate solution may be a multi-use pathway around the outside of the circle. Splitter islands would be used as refuge islands for the path.

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## 4.0 DEVELOPMENT TRENDS

### 4.1 Existing Land Use

Burlington County is one of the fastest growing counties in the State of New Jersey. Within the county, the Route 206 Farmbelt Corridor is one of the fastest growing regions. Land use in the corridor ranges from primarily urban in the northwest, to agriculture and open space in the east and central area. The predominant land use zones include exurban rings and a predominantly agricultural zone with some historic village centers with surrounding subdivisions and pockets of intensifying suburban sprawl.

Dense residential settlement patterns exist in the City of Bordentown and in Fieldsboro Borough, both older municipalities which developed around riverfront and railroad commerce. Other high density residential clusters exist in the older residential communities of Pemberton Borough and Wrightstown Borough.

Farmland and open space are widely distributed throughout the corridor with greater concentrations being in Chesterfield, North Hanover, Mansfield and Springfield townships. In these townships, residential development is concentrated in a few historic villages, while agriculture is the principal economic activity outside these residential clusters. This is a region whose historic village and town centers and surrounding scenic landscapes exemplify development outcomes that are recommended in the State Development and Redevelopment Plan. This is also a landscape where unsurpassingly beautiful built and natural environments are threatened by the impacts of increasing sprawl.

### 4.2 Proposed Land Use

In an effort to protect the traditional character of the corridor, it is the goal of county and local municipalities to promote and develop a smart growth vision, where proposed residential, commercial and industrial developments can be guided to conform to the desired outcome. The goal is to concentrate development in urban centers while preserving agricultural areas and open space.

Future development in the pipeline indicate a concentration of residential, commercial and industrial activity in several nodes which are traditional urban centers (see **Map 7**). In Bordentown Township, future development is planned for areas in or adjacent to existing development. New town centers are proposed for Bordentown Township and Eastampton Township. In Bordentown Township, the new town center is planned for the area in the vicinity of Farnsworth Avenue. This will be the seat of the township administration along with mixed use development. A similar land use cluster is proposed for Eastampton Township, which will have its town center adjacent to Mount Holly, which is the county seat. In Chesterfield Township, a planned village development is

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proposed which would have a range of housing choices for people with different ages, needs and incomes. It would also have social services and amenities within walking distance of homes, providing a compact, pedestrian-friendly and mixed-use environment. Concentrations of civic, institutional and commercial activity would be embedded in neighborhoods and districts. This planned village development will be adjacent to Crosswicks Village, an historic self-contained community.

Other areas of high growth are expected in Wrightstown Borough and Springfield Township where their borders meet near Saylor's Pond Road. The proposed development in Wrightstown will be located next to the existing downtown and will include a mixture of residential and commercial uses. In Springfield Township, a new industrial park is proposed adjacent to the Wrightstown development.

The area in Mansfield Township along Columbus Road and west of US 206 is targeted for residential and commercial development. Almost 400 residential units are planned for this area which is midway between the Village of Columbus and a large suburban residential community to the west.

In an effort to protect the rural character of the area by preserving agricultural areas and open space, the county has vigorously pursued a farmland preservation program to achieve these objectives. To date, more than 17,000 acres within the study area have been preserved while 400 acres are pending acquisition. These areas are concentrated in the northeast and central sections of the study area which also coincides with the desired no-growth area. Most of Southampton, New Hanover and Pemberton Township is under the jurisdiction of the Pinelands Commission. Because this is an environmentally sensitive and protected area, development is strictly regulated and very little growth is expected in this area.

The Fort Dix and McGuire Air Force Base facilities in New Hanover and Wrightstown are expected to maintain their current level of operation within current borders.

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## 5.0 TRAVEL FORECASTING

### Overview

This section analyzes the future traffic conditions on selected arterials in the Route 206/Route 130 corridor, and identifies facilities that may be congested. Using the DVRPC regional simulation model, 2025 traffic volumes on 41 arterial segments in the corridor were estimated. The DVRPC model includes all freeways, arterials and collector roadways in the DVRPC region, as well as selected local roads. Important inputs to the model are the forecasts of future socio-economic growth and land use development. Forecasts of future growth for the corridor and the rest of the region were input in the model. Population and employment forecasts by traffic analysis zones (TAZ) were used to generate total trip productions and attractions for each zone. These forecasts were based on the DVRPC Board-approved 2025 population and 2025 employment forecasts, as modified for the Burlington County scenarios.

The model was run under two scenarios for Burlington County development, historical trends and clustered growth. These scenarios assumed different growth patterns for the Route 206/Route 130 Corridor. The trend scenario assumes that the corridor will continue to grow in a decentralized manner based on past trends. Cluster development seeks to concentrate development into high-density areas. The result is a land use pattern in which growth occurs in urbanized areas and open space is preserved. In addition, both scenarios assumed improvement of corridor highway and transit facilities consistent with the DVRPC FY 2004-2006 Transportation Improvement Program for New Jersey.

Both scenarios were modeled to identify the arterial sections in the corridor in which there would be a change in congestion because of clustering. That there would be changes is not surprising: Urban form and population density are important determinants of household trip making. Because of the increased propensity to walk to work, school, shopping, etc., cluster development usually produces fewer and shorter vehicle trips overall. Two measures of congestion were analyzed to assess future traffic conditions: 1) the ratio of traffic volume to capacity (V/C) on each of the 41 arterial segments, and 2) vehicle miles traveled (VMT) in each of the 13 Minor Civil Divisions (MCD's) in the study area.

### Future Development Assumption

The cluster development scenario is based on Burlington County's vision of its own future growth. A future land use concept map (**Map 7**) was developed by the Burlington County Department of Economic Development and Regional Planning based on 1) development that is already proposed within the study area, and 2) Burlington County's vision, which was the product of discussions between the county and its municipal governments. The implementation of the concept map is dependent on the ability of the county to continue to influence change at the municipal level. In the map, the primary land uses were identified and quantified and the geographic location for these land uses plotted. The non-growth areas were also identified based on the areas that are preserved or are being negotiated to be preserved, under the county's farmland preservation program. The Fort Dix/McGuire AFB reservation and the Pinelands Commission area are also expected to experience minimal or no growth. Overall, with cluster development, the vision is that

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development will be concentrated in and around new or existing town centers. The resulting land use pattern would preserve open space and farmland.

The trend based forecast used DVRPC's 2025 socio-economic projections for the corridor. These projections were based on trends included in the 1980, 1990 and 2000 census.

#### Future Road Network

The travel forecast was run on a conceptualized roadway network that reflected existing highway and transit facilities and future changes to the region's roads that are identified in DVRPC's TIP and 2025 transportation plans. These included several important improvements which are expected to influence travel in the Route 130 /Route 206 corridor:

1. Completion of the I-95/Pennsylvania Turnpike interchange
2. Widening of the Pennsylvania Turnpike Bridge from four to six lanes
3. Completion of Rising Sun Connector, and
4. Addition of continuous left turn lane on CR 530 from US 206 to CR 644

These changes are expected to increase the efficiency and capacity of the roadway network serving the study area.

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## 5.1 Modeling Assumptions

The forecasts produced by the DVRPC model are a direct result of the inputs and assumptions. These include socio-economic projections which are derived from the existing DVRPC 2025 socio-economic forecast.

### Population and Employment Growth

The trip forecast was made within the context of the DVRPC population and employment forecasts, adopted by the DVRPC Board in June of 2000. **Table 1** presents 2000 Census population and projected population growth for the municipalities within the study area. The largest difference between the 2000 Census and 2025 forecast, occurred in Mansfield, Chesterfield, Eastampton, and Springfield Townships which had differences of 81.1, 45.7, 45.2 and 41.5 percent, respectively. The other study area municipalities forecasts showed less dramatic growth. Population is expected to decline only in Pemberton Borough where a 7.4% decline is forecasted by the year 2025.

**Table 1**  
**2000 to 2025 Population Growth for the**  
**Route 130/Delaware River Corridor Extension**  
**Route 206/Farmbelt Corridor**

Municipality	2000 Census Population	2025 Forecast Population	Difference From 2000	Percent Difference
Bordentown City	3,969	4,500	531	13.4
Bordentown Township	8,389	10,359	1,970	23.5
Chesterfield Township	5,938	8,652	2,714	45.7
Eastampton Township	6,217	9,030	2,813	45.2
Fieldsboro Borough	513	700	187	36.5
Mansfield Township	5,090	9,217	4,127	81.1
New Hanover Township	9,744	11,180	1,436	14.7
North Hanover Township	7,370	8,395	1,025	13.9
Pemberton Borough	1,210	1,120	(90)	(7.4)
Pemberton Township	28,715	30,862	2,147	7.5
Southampton Township	10,230	12,583	2,353	23.0
Springfield Township	3,216	4,550	1,334	41.5
Wrightstown Borough	748	831	83	11.1
<b>Total</b>	<b>91,349</b>	<b>111,979</b>	<b>20,630</b>	<b>22.6</b>

**Table 2** presents the DVRPC board adopted 2025 employment growth trends for municipalities in the study area. Projected employment growth is for 9 of the 13 municipalities in the study area to

grow less than the average for the corridor (15.6%). The highest percentage increase is expected to be in Eastampton (114.3%) while the largest decline is expected in Fieldsboro (-33.3%) and North Hanover (-16.7%).

**Table 2**  
**1997 to 2025 Employment Growth for the**  
**Route 130/Delaware River Corridor Extension**  
**Route 206/Farmbelt Corridor**

Municipality	2000 DVRPC Employment	2025 Forecast Employment	Difference From 2000	Percent Difference
Bordentown City	2,150	1,950	(200)	(9.3)
Bordentown Township	6,300	6,750	450	7.1
Chesterfield Township	1,000	1,000	0	0
Eastampton Township	700	1,500	800	114.3
Fieldsboro Borough	150	100	(50)	(33.3)
Mansfield Township	1,350	1,550	200	14.8
New Hanover Township	14,050	15,100	1,050	3.4
North Hanover Township	600	500	(100)	(16.7)
Pemberton Borough	850	900	50	5.9
Pemberton Township	7,800	10,100	2,300	29.5
Southampton Township	3,100	4,801	1,701	54.9
Springfield Township	900	1,050	150	16.7
Wrightstown Borough	2,850	3,000	150	5.3
<b>Total</b>	<b>41,800</b>	<b>48,301</b>	<b>6,501</b>	<b>15.6</b>

## 5.2 Methodology

The growth forecast for the US 130/ US 206 corridor was determined by the following process. First, existing and proposed development activity in the study area was assigned to TAZs. The TAZ structure was specially designed based upon anticipated and planned growth patterns. Areas designated for cluster development were separated from open space. In addition, local roads were added to the DVRPC simulation network to better represent actual conditions. Second, for the trend growth scenario, the population for the area municipalities based on the DVRPC board adopted 2025 forecast, was assigned to these TAZs. Next, a 2025 projection of employment was made based on the DVRPC board adopted 2025 socioeconomic forecast. Finally, the 2025 population and employment growth was redistributed to clusters of development within the Route 206/Route 130 corridor, to prepare the second growth scenario for testing with the DVRPC model.

The DVRPC simulation model was run for 1997 to establish a basis for comparison and to ensure accuracy. The model was then run for both 2025 scenarios and results tabulated. Two products were created for each scenario – AADT for 41 links, and volume over capacity (V/C) ratio for the links within the study area – in an effort to identify those links that will be at or over capacity in the year 2025. A discussion of the location and rationale for the cluster designations may be found in section 4.2 Proposed Land Use. **Map 7** (also in 4.2) shows the designated clusters.

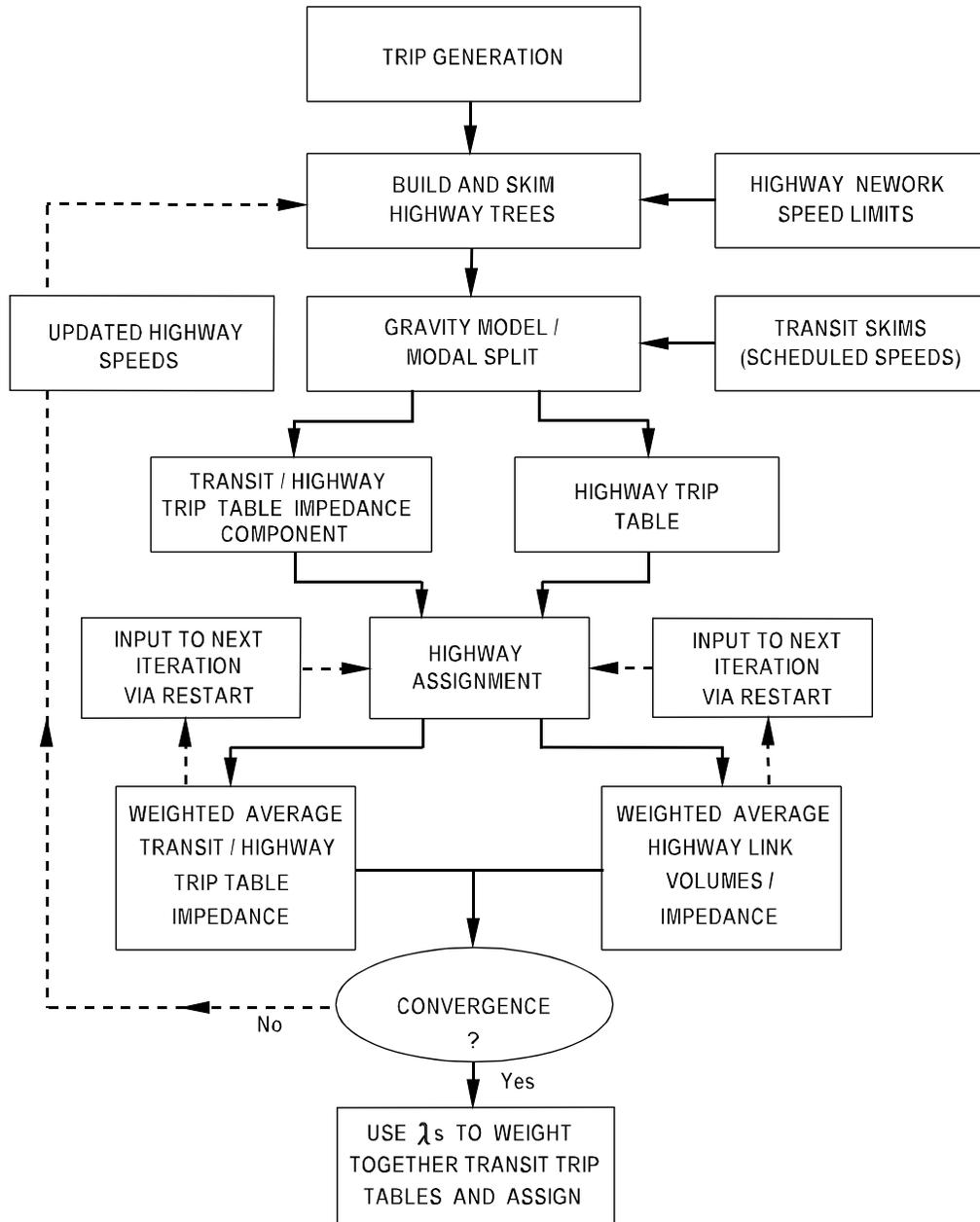
### Synopsis of the Enhanced DVRPC Travel Simulation Process

The enhanced DVRPC travel simulation process utilizes the Evans Algorithm to iterate the model. The Evans Algorithm re-executes the trip distribution and modal split models based on updated highway speeds after each iteration of highway assignment and assigns a weight ( $\lambda$ ) to each iteration. This weight is then used to prepare a convex combination of the link volumes and trip tables for the current iteration and a running weighted average of the previous iterations. This algorithm converges rapidly to the equilibrium solution on highway travel speeds and congestion levels. About seven iterations are required for the process to converge to the approximate equilibrium state for travel patterns. After equilibrium is achieved, the weighted average transit trip tables are assigned to the transit networks to produce link and route passenger volumes.

DVRPC's enhanced travel simulation model is disaggregated into separate peak period, midday, and evening time periods. This disaggregation begins in trip generation where factors are used to separate daily trips into peak, and midday travel. Evening travel is then defined as the residual after peak and midday travel are removed from daily travel. The enhanced process then utilizes completely separate model chains for peak, midday, and evening travel simulation runs. The peak period (combined AM and PM) is defined as 7:00 AM to 9:00 AM and 3:00 PM to 6:00 PM, midday is defined as 9:00 AM to 3:00 PM and evening (6:00 PM-7:00 AM). The separation of the models into three time periods was accomplished with few changes to the basic models or their parameters is required. Inputs sensitive to time of day such as highway capacities and transit service levels were disaggregated to be reflective of time-period specific conditions.

The enhanced iterative DVRPC model is charted in **Figure 1**. The first step in the process involves generating the number of trips that are produced by and destined for each traffic zone and cordon station throughout the nine-county region.

**Figure 1**  
**Evans Implementation Using DVRPC's Regional Simulation Model**



## 1. Trip Generation

Both internal trips (those made within the DVRPC region) and external trips (those which cross the boundary of the region) must be considered in the simulation of regional travel. Internal trip generation is based on zonal forecasts of population and employment, whereas external trips are estimated from cordon line traffic counts. The latter also include trips which pass through the Delaware Valley region. Estimates of internal trip productions and attractions by zone are established on the basis of trip rates applied to the zonal estimates of demographic and employment data. This part of the DVRPC model is not iterated on highway travel speed. Rather, estimates of daily trip making by traffic zone are calculated and then disaggregated into peak, midday, and evening time periods.

## 2. Evans Iterations

The iterative portion of the Evans Algorithm involves updating the highway network restrained link travel speeds, rebuilding the minimum time paths through the network, and skimming the inter-zonal travel time for the minimum paths. Then the trip distribution, modal split, and highway assignment models in sequence for each pass through the model chain (see **Figure 1**). After convergence is reached, the transit trip tables for each iteration are weighted together and the weighted average table assigned to the transit network. The highway trip tables are loaded onto the network during each Evans iteration. A composite highway trip table is not required to perform the highway assignment - rather the highway link volumes from the assignment are weighted together directly. Seven iterations of the Evans process, for each time period, are performed to ensure that convergence on travel times is reached.

## 3. Trip Distribution

Trip distribution is the process whereby the zonal trip ends established in the trip generation analysis are linked together to form origin-destination patterns in the trip table format. Peak, midday, and evening trip ends are distributed separately. For each Evans iteration, a series of seven gravity-type distribution models were applied at the zonal level for each time period. These models follow the trip purpose and vehicle type stratifications established in trip generation. Documentation of the trip distribution models is included in the commission report entitled, "1997 Travel Simulation Model for the Delaware Valley Region."

## 4. Modal Split

The modal split model is also run separately for the peak, midday and evening time periods. The modal split model calculates the fraction of each person-trip interchange in the trip table which should be allocated to transit, and then assigns the residual to highway. The choice between highway and transit usage is made on the basis of comparative cost, travel time, and frequency of service, with other aspects of modal choice being used to modify this basic relationship. In general, the better the transit service, the higher the fraction assigned to transit, although trip purpose and auto ownership also affect the allocation. The model subdivides highway trips into auto drivers and passengers. Auto driver trips are added to the truck, taxi, and external vehicle trips in preparation

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for assignment to the highway network. See DVRPC report entitled "1990 Travel Simulation Model for the Delaware Valley Region" for a detailed description of the model parameters.

## 5. Highway Assignment

The final step in the iterative simulation process is the assignment of vehicle trips to the highway network. For peak, midday, and evening travel, this assignment model produces the future traffic volumes for individual highway links that are required for planning analyses. The highway network and trip table underlying the assignment is regional in nature. This allows the diversion of highway vehicular travel into and through the study area to various points of entry and exit in response to the characteristics of the transportation system.

For each Evans iteration, highway trips are assigned to the network by determining the best (minimum time) route through the highway network for each zonal interchange and then allocating the interzonal highway travel to the highway facilities along that route. This assignment model is "capacity restrained" in that congestion levels are considered when determining the best route. The Evans equilibrium assignment method is used to implement the capacity restraint. When the assignment and associated trip table reach equilibrium, no path faster than the one actually assigned can be found through the network, given the capacity restrained travel times on each link.

## 6. Transit Assignment

After equilibrium is achieved, the weighted average transit trip tables (using the Lambda's calculated from the overall Evans process as weights) are assigned to the transit network to produce link and route passenger volumes. The transit person trips produced by the modal split model are "linked" in that they do not include any transfers that occur either between transit trips or between auto approaches and transit lines. The transit assignment procedure accomplishes two major tasks. First, the transit trips are "unlinked" to include transfers, and second, the unlinked transit trips are associated with specific transit facilities to produce link, line, and station volumes. These tasks are accomplished simultaneously within TRANPLAN, which assigns the transit trip matrix to minimum impedance paths built through the transit network. There is no capacity restraining procedure in the transit assignment model.

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### 5.3 Future Travel Conditions

In this section, the measures of congestion used in the analysis are described. Next, future travel conditions in the corridor are discussed, and facilities that are expected to experience congestion are identified. Then congestion levels under the two future development scenarios are contrasted.

#### Measures of Congestion

DVRPC’s Regional Simulation Model produced 2025 travel forecasts of average annual daily trips (AADT) for most major and minor arterials in the US 206 study corridor. These travel forecasts were then used to calculate three measures of congestion to assess future traffic conditions: 1) The traffic volume on each of 41 roadway segments, 2) The ratio of traffic volume to capacity (V/C) on each of 41 roadway segments, and 3) Vehicle miles traveled (VMT) in each of 13 municipalities on an average day. V/C describes the volume of traffic using a segment of roadway compared to the capacity of the roadway to carry traffic. Volume refers to seasonally adjusted AADT. VMT is an indicator of the intensity of trip making (the number of trips and their length) in a geographical area. For this study, the measure is defined as the total number of highway vehicle miles traveled in a given Minor Civil Division (MCD) on a given day for all highway vehicle types. It includes vehicle trips beginning or ending in the zone, and through trips.

#### Trend Scenario

DVRPC modeled future traffic volumes and calculated a measure of congestion (V/C) for 41 highway segments in the US 206 study corridor. The facilities that were modeled included the primary route, US 206, as well as important parallel and intersecting routes. These facilities and their level of congestion for the trend scenario are shown on **Map 8** and listed in **Table 3**.

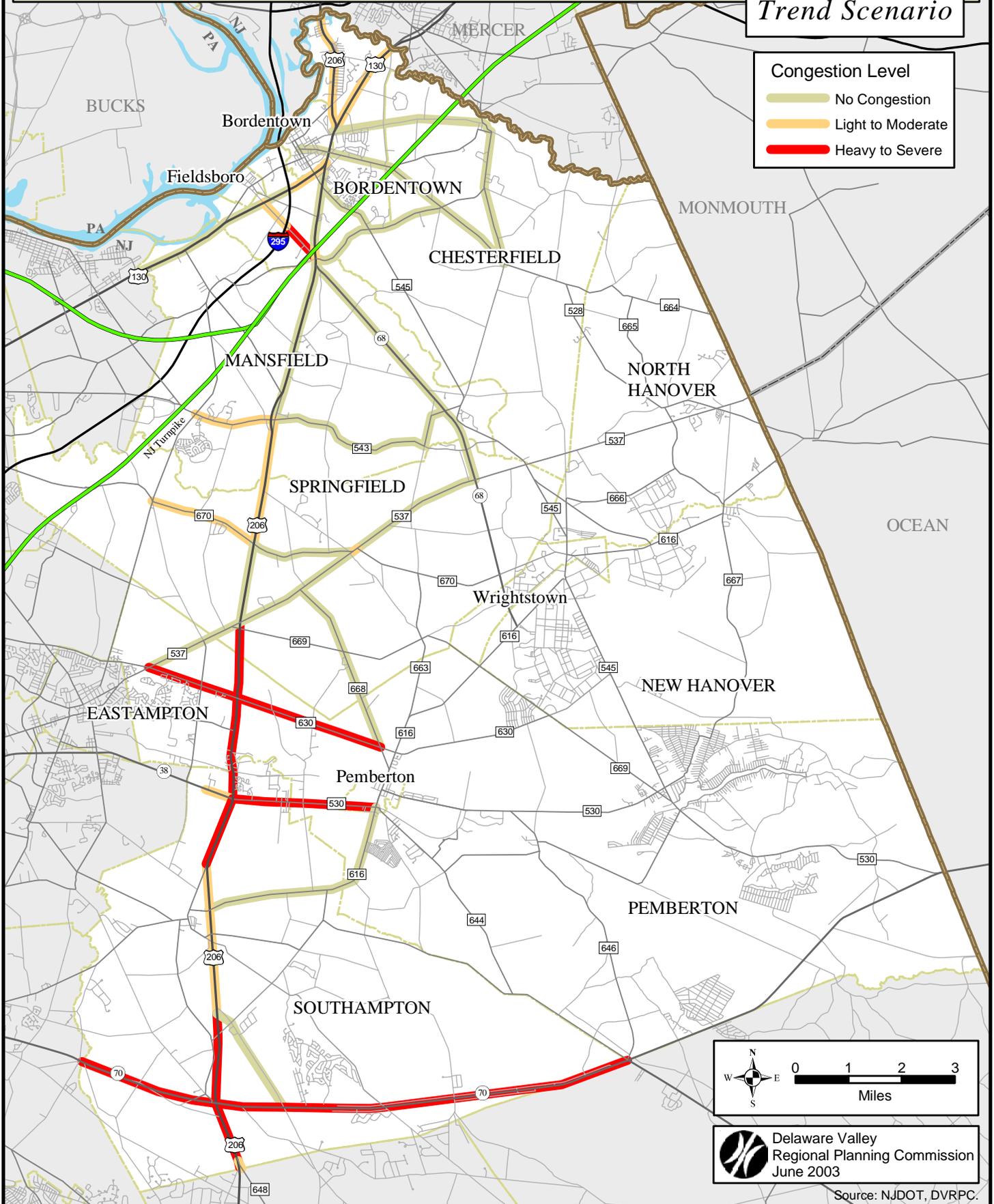
**Table 3**  
**Highway Facilities Analyzed**

Type of Facility	Facility
Primary Route	US 206
Parallel Routes	NJ 68, CR 545 (Georgetown Road), CR 668 (Arney’s Mount Road), CR 677, New Road
Intersecting Routes	US 130, NJ 38, NJ 70, CR 528, CR 530, CR 537, CR 543, CR 616, CR 630, CR 670, Crosswicks Street, Old York Road, Rising Sun Road, Ward Avenue



# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 8:  
2025 Forecast  
of Congestion  
Trend Scenario





The model results suggest that most segments of most of the major and minor arterials in the study corridor (71% of roadway mileage) will experience no congestion or light to moderate congestion. But some segments of major arterials will experience heavy to severe congestion. In the analysis, V/C scores were interpreted using the following scale: A V/C score less than 0.6 was associated with “no congestion”; a score greater than 0.6 but less than 0.85 was associated with “light to moderate congestion”; and a score greater than 0.85 was associated with “heavy to severe congestion” (see **Table 4**).

**Table 4**  
**2025 Forecasted Highway Congestion**

V/C	Traffic Conditions	Percent of Roadway Mileage
< 0.6	No Congestion	56%
0.6 to 0.85	Light to Moderate Congestion	15%
> 0.85	Heavy to Severe Congestion	29%

The incidence of future congestion is now discussed by type of facility (primary route, parallel route, and intersecting route).

1. Primary Route

Traffic congestion on US 206 will vary by location. Most sections of US 206 where congestion is forecast to be heavy to severe are adjacent to significant east-west arterials, including NJ 70, CR 530, and CR 630. The congestion on these sections of US 206 will be caused partly by congestion on the intersecting routes. Traffic on US 206 will also add to that congestion. The rest of US 206, including several long stretches of road in Springfield and Mansfield Townships, will experience only light to moderate congestion.

2. Parallel Routes

The forecast for all parallel routes is no congestion.

3. Intersecting Routes

Congestion on three major east-west arterials is forecasted to be heavy to severe. These are NJ 70, CR 530, and CR 630. An important reason that these facilities will be congested is that they are located between two high growth areas: Ocean County and Cherry Hill. Ocean County is forecasted for high levels of residential growth. Likewise, the Cherry Hill area has been and will continue to be a site of high growth for business parks and retail activity. The combination will mean increasing traffic between these two areas. In addition, the three facilities are also important routes to Camden and Philadelphia. Finally, NJ 70 also experiences shore traffic in the summer months. Most of the congestion associated with shore traffic occurs on Friday evenings and on Sundays. Unfortunately, this seasonal congestion is likely to continue into the future; it may also create traffic backups on US 206, which intersects with all three of these routes. The problems on CR 530 have been identified by Burlington County and improvements have been included in the TIP. These improvements include construction of a center turn lane.

Congestion on Rising Sun Road, west of US 206, is also forecasted to be heavy to severe. Truck traffic will contribute to this congestion. Trucks use Rising Sun Road because it provides access between Interstate 295 and the New Jersey Turnpike and, in addition, because there is a large truck stop located there. Light to moderate congestion is forecasted for sections of US 130, NJ 38, and CR 670, west of US 206.

### **Cluster Scenario**

V/C measures for the 41 highway segments were also calculated under the cluster scenario. Congestion levels are shown on **Map 9**. The V/C results suggest that future traffic conditions would be nearly identical under either scenario; other measures indicate some differences.

### **Trend Versus Cluster Scenarios**

The previous sections analyzed future travel conditions in the US 206 study corridor using V/C as the measure. Selected facilities were placed in one of three categories based on the 2025 travel forecasts: “no congestion”, “light to moderate congestion”, or “heavy to severe congestion”. These categories are necessarily broad for two reasons. First, the use of a regional model for a local travel study requires that the interpretation of the results be conservative because of the problem of statistical uncertainty. Second, although the results of DVRPC’s Regional Simulation Model are valid for a generalized planning study like this one, an engineering design study that considered analysis of roadway geometry, traffic composition, and other relevant factors would be required to specify solutions for projected congestion problems. Traffic design analysis is beyond the scope of this study. Yet cluster development has the potential to alter travel patterns in the study corridor. This section discusses the effect of cluster development on travel volume on major and minor arterials; and on the intensity of trip making (i.e. the number and length of vehicle trips) in the thirteen corridor municipalities.

### Travel Volumes

Travel volumes on selected facilities were analyzed to assess the effect of the development of clusters, shown in **Map 10**, on highway travel in the US 206 corridor. The map shows five outcomes when travel volumes under the cluster development scenario and the trend scenario are contrasted:

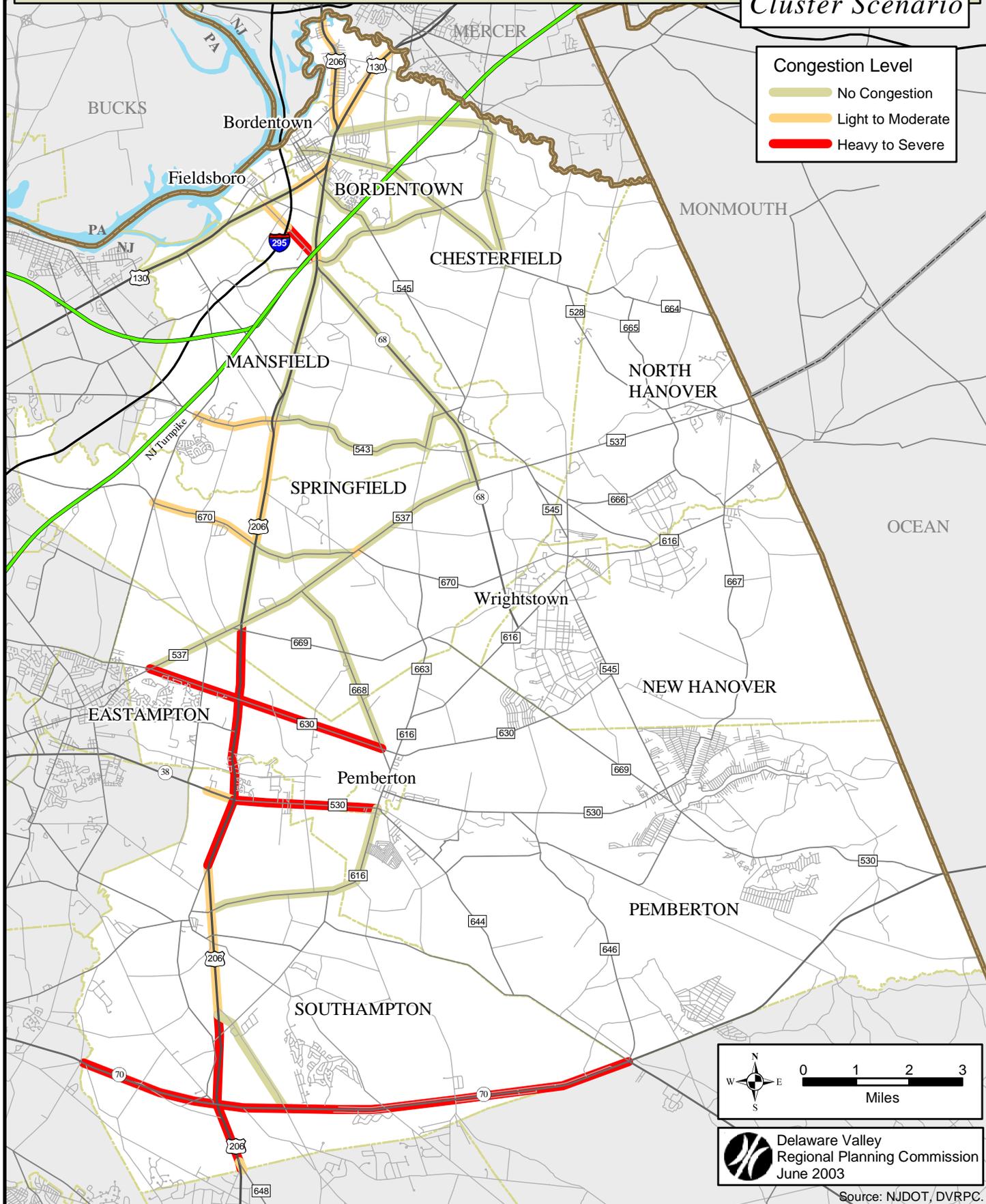
- 1) Cluster development results in an increase in travel volume greater than or equal to 10%
  - 2) Cluster development results in an increase in travel volume greater than or equal to 5%
  - 3) Cluster development results in no change (i.e. an increase or decrease less than 5%)
  - 4) Cluster development results in a decrease in travel volume greater than or equal to 5%, and
  - 5) Cluster development results in a decrease in travel volume greater than or equal to 10%.
-

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Map 9:  
2025 Forecast  
of Congestion  
Cluster Scenario

**Congestion Level**

- No Congestion
- Light to Moderate
- Heavy to Severe



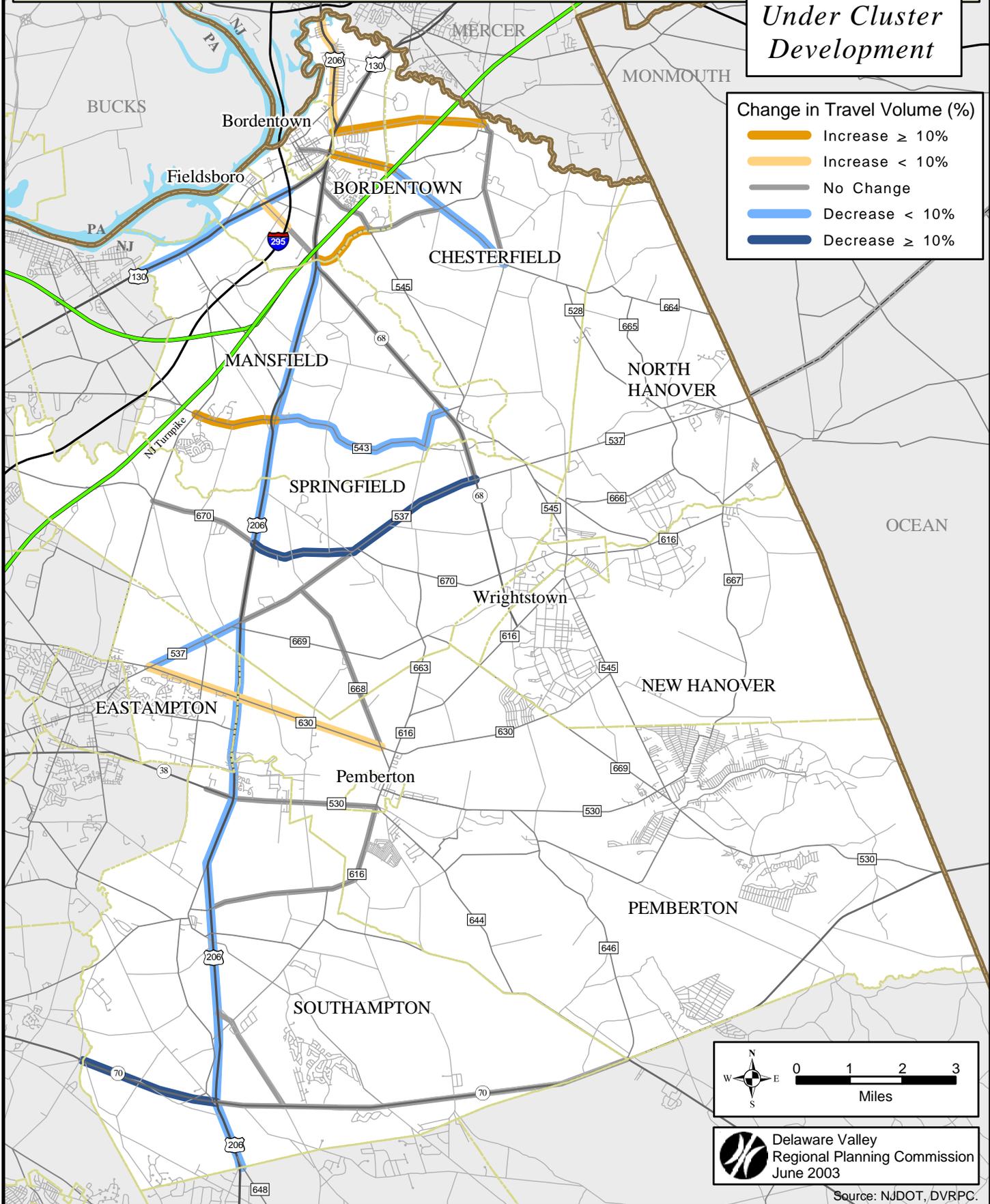
Delaware Valley  
Regional Planning Commission  
June 2003

Source: NJDOT, DVRPC.



# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

*Map 10:  
Change in  
Travel Volume  
Under Cluster  
Development*





**Table 5** lists only the four outcomes where there is change between the scenarios. The results indicate a strong geographic distribution consistent with what would be predicted from the pattern of cluster development implemented in the model. Under the cluster development scenario, travel volumes were reduced by 5% or more on most of US 206 south of NJ 68. Travel volumes were also reduced by 5% or more on CR 543 (east of US 206) and by 10% or more on CR 670. They were also reduced by 5% or more on CR 528. These reductions result from concentrating development in growth centers and preserving agricultural lands and open space.

The results were different north of Mansfield Township. Travel volumes increased by 5% or more on US 206 north of NJ 68. This is the effect of increased travel volumes on routes that feed into US 206, including Ward Avenue and Old York Road. Under the cluster development scenario, travel volumes on Ward Avenue and Old York Road increased more than 10%. The surge in traffic is largely the result of a proposed residential and industrial development in Chesterfield and Bordentown Townships.

These effects are important to note because marginal changes in travel volumes on a facility that is already at or near capacity may result in a disproportionately large degradation in highway travel conditions. These increased congestion levels may require capital improvements to maintain an acceptable level of service.

**Table 5**  
**Change in Travel Volume with Cluster Development**  
**On Selected Highways**

Change in Travel Volume (%)	Facility
Increase >10%	Ward Avenue, CR 528, Old York Road, CR 543 (west of US 206)
Increase >5%	Rising Sun Road, CR 630, US 206 (north of NJ 68)
Decrease >5%	CR 528, US 130, CR 543 (east of US 206), CR 537, US 206 (south of NJ 68)
Decrease >10%	CR 670, CR 537, NJ 70

**Table 6** presents current and forecasted AADT under both scenarios, on selected highways in the study corridor. In the table, the highways are broken down by type of facility:

1) primary route (US 206), 2) parallel routes, and 3) intersecting routes. The largest absolute increase in AADT under the cluster scenario occurred on Ward Avenue (2,100); and the largest absolute decrease in AADT on NJ 70 and on US 206 between NJ 68 and CR 543 (-1,700). The largest percentage increase in AADT occurred on CR 677 (62%) and the largest percentage decrease in AADT on CR 670 (-29.3%).

**Table 6 - Current and Forecasted AADT on Selected Highways**

Road	From	To	Current AADT	2025 Forecast Trend	2025 Forecast Cluster Dev
<b>US 206</b>					
US 206	Mercer County	US 130	23,600	28,200	29,400
US 206	US 130	NJ Turnpike	21,600	25,800	26,400
US 206	NJ Turnpike	NJ 68	29,200	38,500	39,800
US 206	NJ 68	CR 543	20,200	27,100	25,400
US 206	CR 543	CR 670	17,400	22,500	21,400
US 206	CR 670	CR 537	18,500	25,100	24,500
US 206	CR 537	CR 530	18,500	24,800	23,600
US 206	CR 530	New Road	18,400	25,000	24,100
US 206	New Road	NJ 70	15,600	22,600	21,900
US 206	NJ 70	CR 648	17,700	26,300	25,500
<b>Parallel Routes</b>					
CR 677	CR 528	CR 672	2,700	3,300	5,000
CR 545	US 206	Old York Rd.	7,900	11,100	10,300
NJ 68	US 206	CR 537	10,700	14,000	14,700
CR 668	CR 537	CR 630	3,100	4,000	4,300
New Road	US 206	NJ 70	3,100	4,700	4,600
<b>Intersecting Routes</b>					
Ward Avenue	US 206	CR 672	3,800	5,100	7,200
Crosswicks Street	US 206	Farnsworth Ave.	3,500	4,100	4,200
CR 528	US 206	CR 672	5,800	7,200	8,000
CR 528	CR 672	CR 664	5,000	7,500	7,100
US 130	US 206	Mercer County	23,600	34,100	34,300
US 130	I-295	US 206	22,900	32,000	32,600
US 130	Maple Ave.	I-295	22,500	33,400	32,000
Rising Sun Road	US 130	I-295	2,500	8,400	8,600
Rising Sun Road	I-295	Old York Rd.	16,700	23,300	23,100
Old York Road	US 206	CR 545	1,300	2,200	2,400
Old York Road	CR 545	CR 528	1,600	2,900	2,900
CR 543	US 206	NJ 68	4,400	4,900	4,600
CR 543	CR 628	US 206	11,300	11,800	13,000
CR 670	CR 628	US 206	6,900	9,700	9,700
CR 670	US 206	CR 537	3,800	6,200	5,100
CR 537	CR 630	US 206	9,400	10,300	9,800
CR 537	US 206	CR 670	9,700	12,200	11,800
CR 537	CR 670	NJ 68	5,200	7,800	7,200
CR 630	CR 537	US 206	10,200	13,100	13,600
CR 630	US 206	CR 668	9,900	12,700	13,400
NJ 38	CR 684	US 206	25,500	31,500	32,100
CR 530	US 206	CR 616	18,200	20,500	21,000
CR 616	US 206	CR 643	4,000	4,600	4,600
CR 616	CR 643	CR 530	7,300	7,900	8,200
NJ 70	Chairville Rd.	US 206	17,100	23,700	22,000
NJ 70	US 206	Four Mile Cir.	18,900	25,000	24,200

### Intensity of Trip Making

Vehicle miles traveled (VMT) was also analyzed to assess the effect of cluster development on travel in the US 206 corridor. VMT expresses the intensity of trip making in an area over a given period of time in the thirteen study area municipalities on an average day.

As noted in section 5.2, the cluster development scenario concentrates development in growth centers shown in **Map 7**. Residential, commercial, and industrial development would be encouraged in these centers. The resulting land use pattern would preserve large tracts of agricultural land and open space. These growth centers would include the northern end of Burlington County, roughly the area northwest of the New Jersey Turnpike, which is already densely developed, as well as several communities on the western edge of US 206.

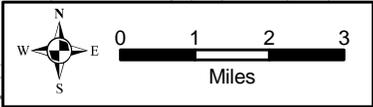
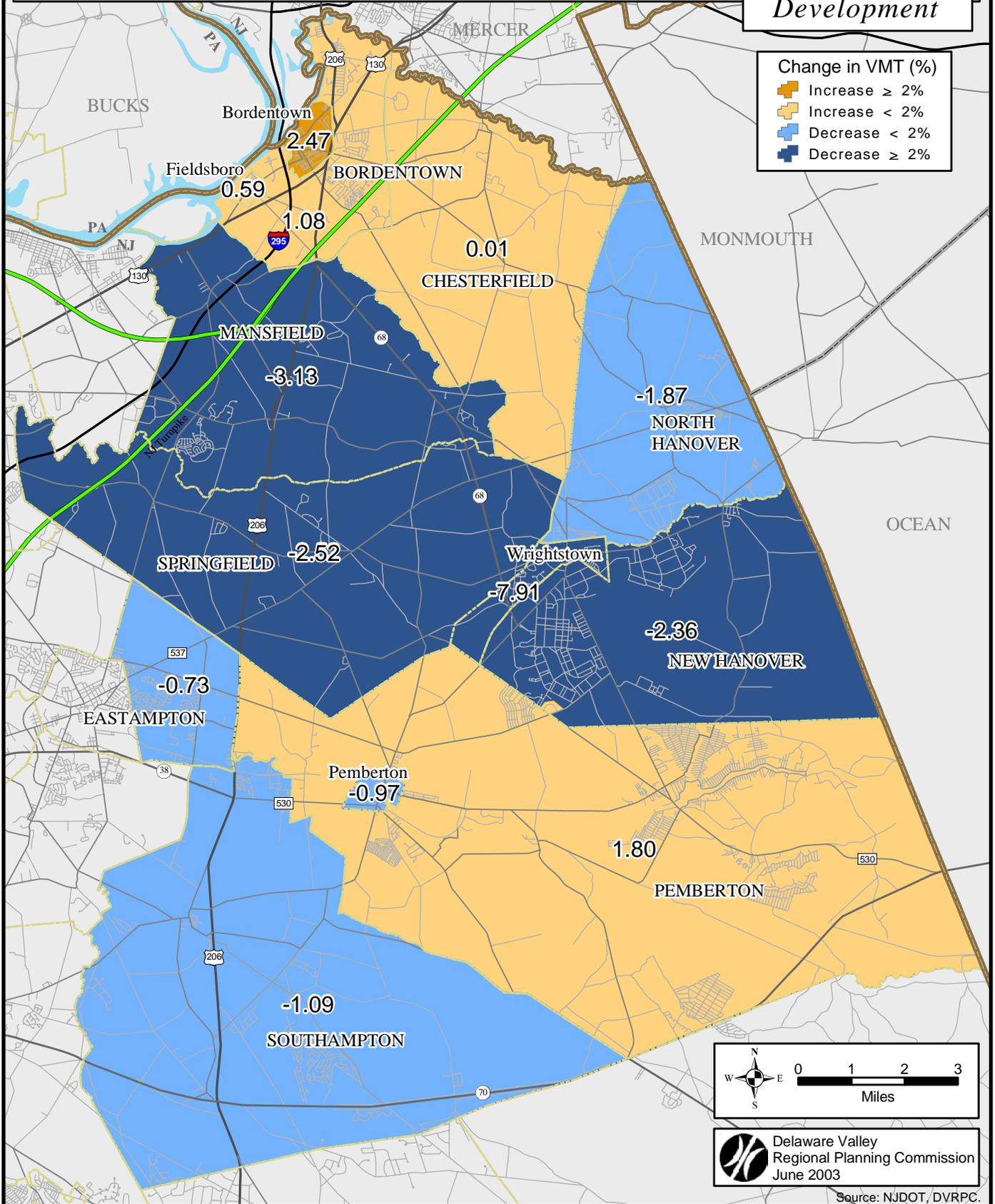
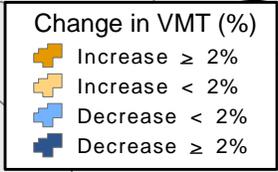
The analysis included trip making on major arterials, minor arterials, and local roads, within the boundaries of the municipalities. Freeway trips were excluded because they have a high share of through trips that are irrelevant to local circulation and congestion. A similar situation applied to the major arterials, but on balance it was thought appropriate to include these facilities because the share of through trips was lower than on the freeways.

VMT values have been tabulated for the thirteen municipalities (**Map 11**). **Table 7** shows the change in VMT from the trend scenario to the cluster development scenario. The table separates the results based on geography. Three of the more developed municipalities located in the north of the study area are listed in the top half of the table; the rest of the municipalities are listed in the lower half. All the north end municipalities showed an increase in trip making under the cluster development scenario. The increase ranges from about one-half of one percent to two and one-half percent. In contrast, seven of the nine other municipalities showed a decrease in trip making under the cluster development scenario. The average decrease was around two percent. The sharpest decrease (7.9%) was in Wrightstown Borough.



# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

*Map 11:  
Change in VMT  
Under Cluster  
Development*





**Table 7**  
**Change in VMT under Cluster Development**

<b>Municipality</b>	<b>Change in VMT (%)</b>
Bordentown City	2.5%
Bordentown Township	1.1%
Fieldsboro Borough	0.6%
Chesterfield Township	-1.1%
Eastampton Township	-0.7%
Mansfield Township	-3.1%
New Hanover Township	-2.4%
North Hanover Township	-1.9%
Pemberton Borough	-1.0%
Pemberton Township	1.8%
Southampton Township	-1.1%
Springfield Township	0.7%
Wrightstown Borough	-7.9%
<b>Total</b>	<b>-0.7%</b>

The results suggest that cluster development would have an overall positive impact on congestion reduction in Burlington County. Furthermore, there are at least two reasons to think that the modeling understated some of the benefits of cluster development. First, the study area accounts for only approximately one-half of Burlington County. Because a small geographical area was being analyzed, trip-making patterns would not be expected to change radically when development was shifted. With clustering, development does not move very far from where it would be located in the trend scenario.

Second, the effect was likely to be small numerically because the corridor has been and continues to be a largely a rural area, with appropriate densities. Therefore, any changes in development patterns and the resulting changes in travel patterns would appear small numerically in the regional model. With through trips accounting for a large share of highway link volumes, local trips would have a limited impact on the overall trip-making patterns, especially on major arterials. Given these limitations, it is striking that the model did show an overall positive impact of clustering on congestion reduction.

Summary

Under the historical trend scenario, DVRPC's Regional Simulation Model forecasts heavy to severe congestion on several major east-west arterials that cross the US 206 corridor: NJ 70, CR 530, and CR 630. A significant source of the congestion will be future residential growth in Ocean County and continuing business and commercial growth in and around Cherry Hill. The forecasted growth for Burlington County will also add to the congestion. Indeed, the model shows congestion increasing along NJ 70, CR 530, and CR 630, as they approach US 206. All three of the facilities carry and are forecasted to carry a large number of through trips. Therefore, it is possible that US 206 will be a bottleneck for east-west travel on these routes. As such, congestion in the US 206 corridor may become an important regional transportation issue in the next two decades.

Analysis of a second scenario for Burlington County development, clustered growth, suggests that cluster development has the potential to significantly alter travel patterns in the study corridor. Cluster development would also have an overall positive impact on congestion reduction.

## **6.0 STRATEGIC IMPLEMENTATION PLAN**

### **6.1 Problem Locations**

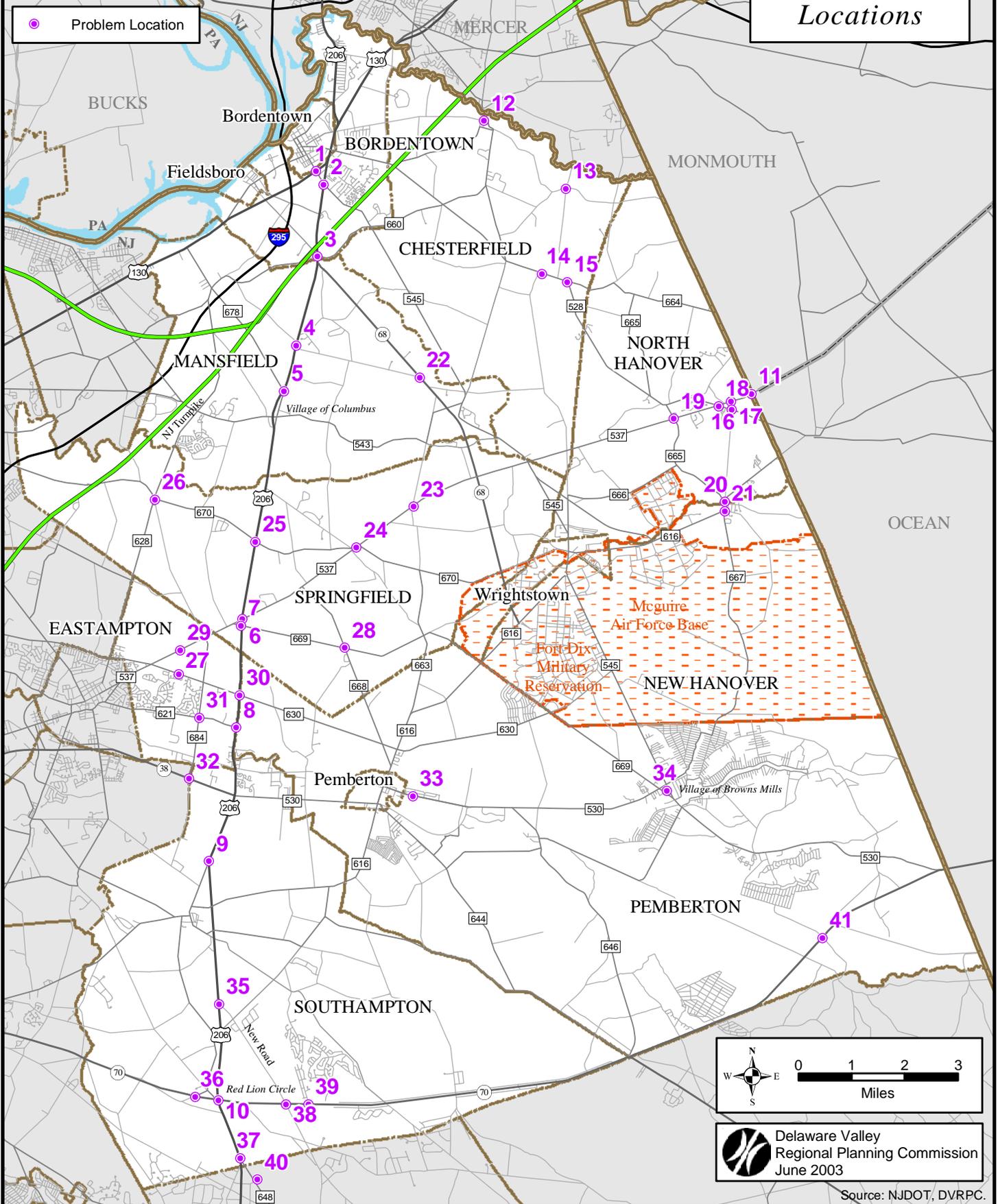
In identifying the location and magnitude of the primary problem locations, input was obtained from representatives from each of the local municipalities, staff from the Burlington County Department of Economic Development and Regional Planning, Burlington County Engineer's Office, New Jersey Department of Transportation and the Delaware Valley Regional Planning Commission.

Multi-agency field views were conducted to review potential locations for inclusion into the study. Staff subsequently engaged in detailed follow-up field views and technical analysis to quantify the identified transportation problem areas (as well as areas projected to have significant impacts on the transportation infrastructure because of proposed changes in a nearby land use) and document practical solutions. The location descriptions are presented from a general north-south direction through the corridor and the numbering has no relation to project priority. A relatively detailed write-up of the existing conditions, identified problems and potential improvement scenarios is presented for the first 11 locations which have been identified. The remaining 30 locations are less descriptive. Because of the nature of this planning document, a technical analysis of alternate improvement schemes was not conducted for these locations and specific detailed improvement recommendations are not provided. Transportation improvements at these locations could have important implications for the economic vitality of the local areas as well as the mobility of the corridor as a whole. The following are descriptions of these transportation and circulation problem areas, and the potential improvement scenarios based on cooperative discussions and input from each of the study participants. **Map 12** illustrates the distribution of these problem locations.



# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 12:  
Transportation  
Problem  
Locations





**1- Intersection of US 130 and Farnsworth Avenue (CR 545).**  
Bordentown Township

Existing Conditions:

US 130 has two travel lanes in each direction plus shoulders in the vicinity of this intersection. The approaches are supplemented by center left turn lanes in each direction. Beyond the center left turn lanes, the roadway is separated by a grass median. Eastbound Farnsworth Avenue is approximately 38 feet wide (an 11-foot approach lane and a 27-foot departure lane). The departure lane is afforded extra width to accommodate trucks from northbound US 130 turning right onto eastbound Farnsworth Avenue. This lane eventually tapers down to 19 feet. Westbound Farnsworth Avenue is 38 feet wide and carries one lane in each direction.

The speed limit on US 130 is 40 MPH in the northbound direction and 55 MPH in the southbound direction. The speed limit on Farnsworth Avenue is posted at 35 MPH.

The completion of the missing link of I-295 through Bordentown Township and into Mercer County has reduced the traffic impact on US 130 and on US 206 through Bordentown Township. Previous to the opening of this facility, traffic used US 206 and US 130 through Bordentown Township as a bypass of the uncompleted highway.

A traffic count conducted by DVRPC in 1994 indicated an AADT of approximately 46,000 vehicles on US 130 just south of Farnsworth Avenue. Subsequent counts, taken in 1995 and 1996 after the opening of the section of I-295 north of US 130, indicated a significant reduction in traffic on US 130. Volumes dropped to the 24,000 to 28,000 range.

New Jersey Transit will commence light rail transit service on the Conrail line which runs generally parallel to US 130 from Camden to Trenton. This operation could have an impact on the turning movements at the intersection of Farnsworth Avenue and US 130.

Identified Problems:

- Northbound US 130 truck traffic experiences difficulty in making right turns at this intersection. Although the northbound approach has a shoulder and the eastbound departure lane is 27 feet wide, trucks were observed encroaching on the curb and sidewalk while making a northbound right turn. (See **Map 13**)
  - Prior to the completion of I-295 north of US 130, the US 130 northbound left turn lane at Farnsworth Avenue was congested in the PM peak and queues often spilled over into the through lane. To address this problem, discussion often referred to construction of a reverse jughandle to accommodate the northbound left turns. However, traffic congestion in the intersection, especially northbound left turns, has greatly decreased since the opening of the new section of I-295 and the need for a northbound jughandle appears to have been eliminated.
  - The opening of I-295 north of US 130 has eliminated one problem but contributes to another. Southbound I-295 truck traffic exits onto northbound US 130 and turns right at Farnsworth Avenue to reach the trucking facilities
-

in the vicinity of Rising Sun Road and US 206 as well as the NJ Turnpike. An existing alternative to this movement is to exit I-295 southbound onto US 130 southbound and turn left onto Dunn's Mill Road to reach US 206. The disadvantage of this route is the potential for conflict with the high school and residences located along Dunn's Mill Road.

#### Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of Mansfield, Chesterfield and Bordentown Townships.

#### Short Term

- Conduct a circulation study which identifies the movements between I-295 northbound / southbound and Rising Sun Road/US 206/NJ Turnpike area. As part of this study, evaluate the impacts of relocating the traffic signal and juggles from Dunn's Mill Road to Rising Sun Road and providing a median break there. With this relocation, trucks from southbound I-295 could exit onto US 130 southbound and turn left onto Rising Sun Road to reach the truck facilities, US 206 or the Turnpike.
- Evaluate the signing on northbound I-295 and northbound US 130 to determine its adequacy in directing traffic to US 206 or the NJ Turnpike. Upgrade this signing if necessary. This should reduce the traffic using the US 130 and Farnsworth Avenue intersection to get to the NJ Turnpike or US 206. A much better alternative is to use Rising Sun Road.
- Conduct peak period turning movement counts and evaluate the need to provide treatment for turning movements from Farnsworth Avenue (turn lanes or modifying the signal timing to provide a protected left turn phase).

#### Long Term

- If right turning problems still exist after rerouting truck traffic destined to the NJ Turnpike or US 206, construct a northbound right turn lane utilizing the vacant lot on the southeast corner.
-

# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 13:  
Farnsworth  
Avenue  
Problem Areas

**Location 1**

vacant lot

Tight turning radius for US 130 NB to Farnsworth Ave.

Municipal Drive

Farnsworth Ave.

130

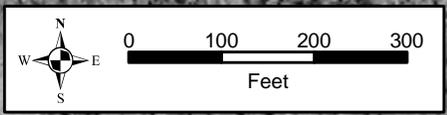
206

weigh station

Bordentown Township

Extra wide approach lane on Farnsworth Ave. being used as two lanes: left turn lane, and a shared through-right turn lane.

**Location 2**





**2- Intersection of US 206 and Georgetown Road (CR 545) / Farnsworth Avenue.**  
Bordentown Township

Existing Conditions:

US 206 is 2 lanes in each direction at this location separated by a grass median. Left turn lanes with protected phasing are present at both the northbound and southbound US 206 approaches. Georgetown Road has one lane in each direction. A vehicle weigh station facility is located on the north side of the intersection within the US 206 median. This facility consists of entrance and exit ramps as well as a small building.

Identified Problems

- The weigh station is in close proximity to the intersection and is occupying land which could be used to extend the left turn lane on US 206 southbound. (See **Map 13**)
- Eastbound Farnsworth Avenue is currently striped for one 19 foot lane with a 13 foot striped shoulder. Field observation revealed that traffic is utilizing this 32 foot area as if it was two lanes.
- No pedestrian amenities are provided on any leg of this intersection.

Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of Mansfield, Chesterfield and Bordentown Townships.

- Extend the left turn lane of US 206 southbound, which is currently 155 feet long, to increase its capacity for left turning vehicles. If necessary, examine the implications of removing the weigh station to accommodate a longer left turn lane.
  - The eastbound approach of Farnsworth Avenue is 19 feet wide with a 13 foot striped shoulder. This space is adequate to accommodate two lanes, a through and left turn lane and a right turn lane. This improvement could be accomplished through re-striping the existing pavement.
  - Examine the need for pedestrian crosswalks, pedestrian signals with pushbuttons, as well as pedestrian warning signage on all legs of the intersection
-

**3- Intersection of Old York Road (CR 660) at Rising Sun Road, and Old York Road at US 206**

Bordentown Township

Existing Conditions:

This location involves two intersections that are in close geographic proximity. This area is heavily impacted by traffic exiting I-295 northbound and connecting with the NJ Turnpike via the Rising Sun Road/Old York Road/US 206 connection. There is a major truck stop on Rising Sun Road near Old York Road which is the destination of many trucks traveling to and from the NJ Turnpike and I-295. Rising Sun Road generally has one lane in each direction plus a center turn lane in the vicinity of the truck stop. Old York Road has one 12 foot lane in each direction south of Rising Sun Road. North of Rising Sun Road, it has two lanes in each direction. US 206 has 2 lanes in each direction at this location separated by a grass median. Left turn lanes with protected phasing are present at both the northbound and southbound US 206 approaches.

Identified Problems

- The turning radius for tractor trailers turning from Rising Sun Road to Old York Road is inadequate. Left turning vehicles often encroach on the opposite lane on Old York Road.
- Northbound tractor trailers often encroach on the opposite lane at the intersection of Rising Sun Road and Old York Road due to inadequate turning radius.
- Heavy truck volumes lead to congestion at this location. During peak periods, traffic sometimes backs up on Old York Road from US 206 to Rising Sun Road.

Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of Bordentown and Mansfield Townships.

## Short Term

- By setting back the stop bar on southbound Old York Road by a few feet, trucks will be able to clear this intersection with greater ease and less conflict.

## Long Term

- The FY2004 TIP provide for the construction of a new connector road between Rising Sun Road and Route 206 as well as pavement rehabilitation on Old York Road and Rising Sun Road, to accommodate heavy traffic between I-295 and Interchange 7 of the New Jersey Turnpike. This is a multi-year project with construction programed to commence in 2004.
-

**4- Mansfield Road East, Mansfield Road West at US 206**  
Mansfield Township

Existing Conditions:

Mansfield Road East and Mansfield Road West intersect US 206 approximately 600 feet apart. Both sections of Mansfield Road are two lane roads with no median. The adjacent land use is primarily agricultural with a few residential properties dispersed nearby.

Identified Problems

- Mansfield Road is a part of the agricultural route that is used by farm equipment to access farms in the nearby vicinity. In getting from Mansfield Road East to Mansfield Road West, slow moving farm equipment have to enter US 206 for approximately 600 feet, then exit US 206 to Mansfield Road West. Similar difficulties arise for traffic traveling in the reverse direction.
- The absence of left turn lanes on US 206 at Mansfield Road East and Mansfield Road West makes left turns difficult.

Potential Improvement Scenarios

Improvements at this location will address circulation and mobility challenges in parts of Mansfield Township.

- Realign the intersection of Mansfield Road East to Mansfield Road West which would permit vehicles, particularly farm equipment, to cross US 206 easier. This improvement is already in the planning phase by NJDOT. Once this is complete, a signal warrant analysis should be conducted at the new intersection.
- Construct left turn lanes on north and southbound US 206 to facilitate through movements on Mansfield Road.

**5- Intersection of Columbus-Hedding Road (CR 678) and US 206**  
Mansfield Township

Existing Conditions:

At this location US 206 has 2 lanes in each direction with a grass median. Columbus-Hedding Road intersects with the southbound lane of US 206. Columbus-Hedding Road is controlled by a stop sign and US 206 is free flowing. The posted speed limit on both US 206 and Columbus-Hedding Road is 50 mph.

Identified Problems

- Sight distance is greatly compromised for traffic entering US 206 from Columbus-Hedding Road. High speeds on US 206 exacerbates the situation.
  - The proximity of two breaks in the grass median along US 206, located less than 190 feet from each other and from Columbus-Hedding Road, creates a situation of potential conflict. Traffic traveling northbound on US 206 needing to make a
-

left turn on Hedding Road uses the second median break. Traffic traveling from Hedding Road to US 206 northbound uses the first median break. This creates conflict between accelerating and decelerating traffic. There is also operational difficulties due to northbound left turning vehicles blocking northbound through lanes

#### Potential Improvement Scenarios

Improvements at this location will address circulation and mobility challenges in parts of Mansfield Township.

- Close the second break in the grass median along US 206 to the north of Columbus-Hedding Road. By removing this second break, there will be fewer conflicts between accelerating and decelerating vehicles at this location.
- A left turning bay should be created in the median of US 206 to remove left turning vehicles from through traffic.

#### **6- Intersection of US 206 and Monmouth Road (CR 537)** Springfield Township

##### Existing Conditions:

The signalized intersection of US 206 and Monmouth Road (CR 537) marks the southern end of a 4 lane section of US 206 before it narrows to 2 lanes. The posted speed limit on US 206 is 55 mph approaching the intersection northbound and 50 mph approaching southbound. The through movement approach lanes of US 206 are each 12 feet wide. US 206 southbound also provides a channelized right turn lane. Neither left turn lanes nor protected phasing is provided on any leg of this intersection.

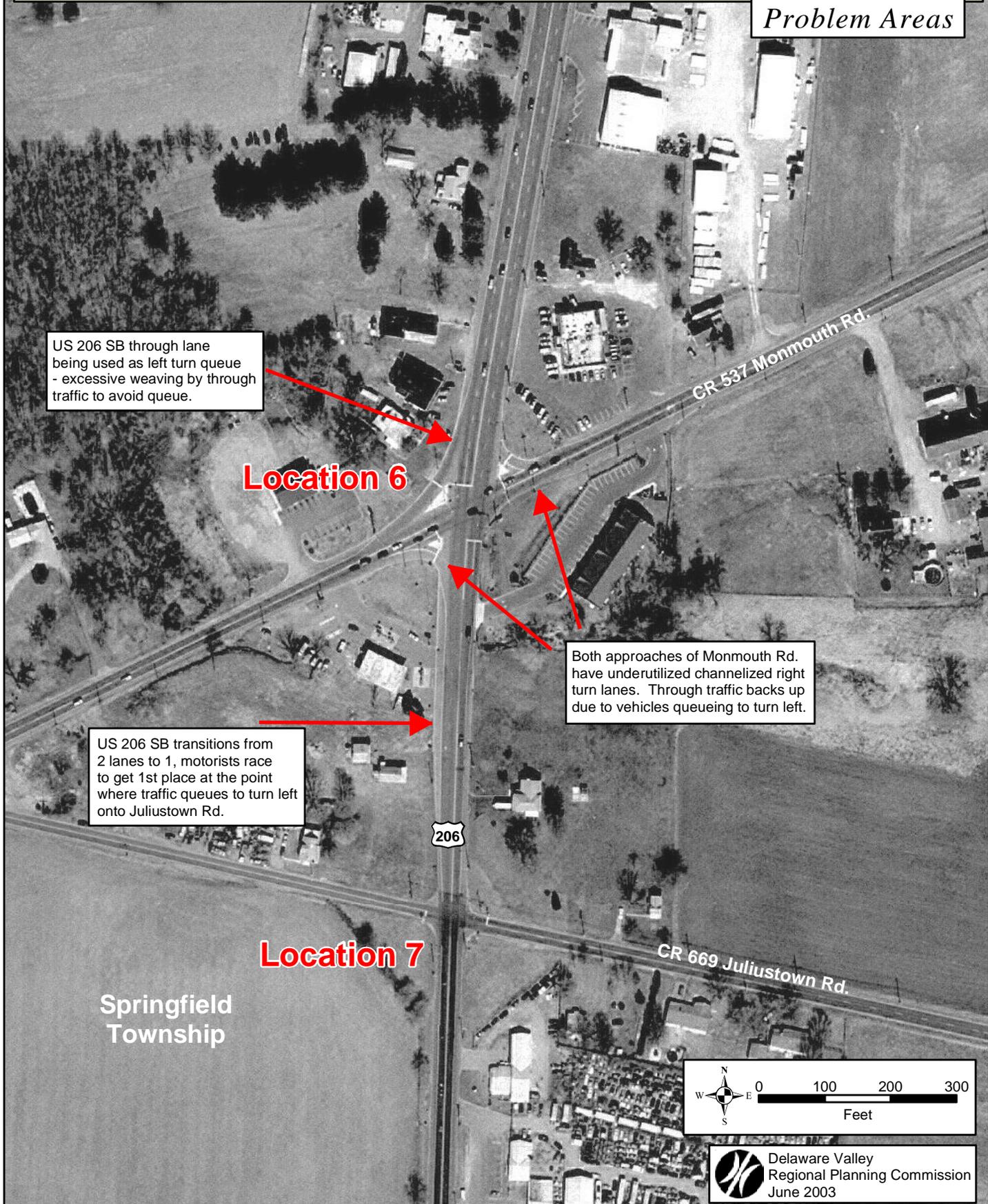
US 206 and Monmouth Road intersect at an acute angle. Monmouth Road is one lane in each direction with channelized right turn lanes on both approaches. The posted speed limit is 50 mph. Each of the four intersection quadrants is developed with primarily retail and service establishments. US 206 has four 12 foot wide lanes on the north side of the intersection narrowing to 2 lanes of 12 feet each on the south side of the intersection. The westbound approach of Monmouth Road has a 14 foot wide lane westbound, a 12 foot wide lane eastbound and a 12 foot channelized right turn lane. Both directions of the eastbound approach have a 12 foot lane with a 14 foot channelized right turn lane eastbound.

##### Identified Problems:

- Excessive weaving occurs on Monmouth Road as through traffic passes vehicles queuing to turn left. (See **Map 14**)
  - This weaving movement within a 50 mph speed limit zone presents safety concerns. Due to the absence of a dedicated left turn lane, the passing lane is being used as a left turn queue. Through traffic in the passing lane must weave into the travel lane to avoid queuing vehicles.
-

# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 14:  
U.S. 206 -  
CR 537  
Problem Areas



US 206 SB through lane being used as left turn queue - excessive weaving by through traffic to avoid queue.

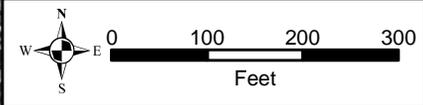
**Location 6**

Both approaches of Monmouth Rd. have underutilized channelized right turn lanes. Through traffic backs up due to vehicles queuing to turn left.

US 206 SB transitions from 2 lanes to 1, motorists race to get 1st place at the point where traffic queues to turn left onto Juliustown Rd.

**Location 7**

Springfield Township





### Potential Improvement Scenarios

Improvements at this location will address circulation and mobility challenges in parts of Springfield, Eastampton and Pemberton Townships. The recommendations for CR 537 Monmouth Road are consistent with the 2001 Parsons Brinckerhoff Report, *Route 206 Corridor Assessment Study*.

- US 206 southbound narrows from two lanes to one lane on the south side of the intersection. This lane drop should take place in advance of the intersection on the north side thus making the passing approach lane available to become a dedicated left turn lane for US 206 southbound. The addition of a protected left turn signal phase would further improve safety at this location. US 206 northbound widens from one through lane to two through lanes at the approach to the intersection. The left through lane should be re-striped to make a dedicated left-turn lane. This would not decrease capacity as the 2 through lane section would begin at the intersection departure instead of the approach. The addition of a protected left turn signal phase for this approach would further improve safety at this location. This comprehensive improvement will eliminate through traffic weaving around left turning vehicles at this intersection.
- Monmouth Road should be redesigned to provide a left turn lane and a shared through-right turn lane in both directions. In order to accommodate this new configuration, the exclusive right turn lanes which currently exists, should be eliminated as they are not critical to the operation of the intersection. This is supported by the 2000 peak hour traffic volumes listed in Figure 3-1 of the 2001 Parsons Brinckerhoff Report, *Route 206 Corridor Assessment Study*. This data shows right turns during the combined a.m and p.m peak periods to be 2.4% of the total movements, and left turns to be 24%.

## **7- Intersection of US 206 and Juliustown Road (CR 669) Springfield Township**

### Existing Conditions:

The intersection of US 206 and Juliustown Road (CR 669), is located approximately 0.2 mile south of the US 206/CR 537 intersection. These intersections operate in tandem with each other. At this location, US 206 narrows from 2 lanes to one lane in each direction. The posted speed limit on US 206 is 50 mph. The southbound lane on US 206 is 15 feet wide with a 7 foot shoulder, the northbound lane is 12 feet wide with a 9 foot shoulder. Juliustown Road is one lane in each direction and is controlled by a stop sign and flashing red beacon. On the west side of the intersection, Juliustown Road has a 10 foot lane in each direction and on the east side, the lanes are 12 feet each. No shoulders are present on either side. The land area on all four quadrants of the intersection is undeveloped.

According to the Parsons Brinckerhoff Report, US 206 at Juliustown Road currently operates at an acceptable level of service on the major north/south movements and is failing on the minor east/west movements. By 2025, this intersection is expected to continue to operate at an acceptable Level of Service on Route 206 but is expected to fail on

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Juliustown Road.

Identified Problems:

- Operational difficulties due to proximity to the Monmouth Road intersection present a situation where US 206 southbound and northbound through traffic is utilizing the shoulder to pass vehicles queuing to turn left onto Juliustown Road, creating a potential accident situation. Heavy truck traffic, high speeds and the narrowing of US 206 southbound to one lane all exacerbate this situation.
- Sight distance is compromised for vehicles turning onto US 206 from Juliustown Road due to overgrown vegetation adjacent to the roadway on US 206.

Potential Improvement Scenarios

Improvements at this location will address circulation and mobility challenges in parts of Springfield, Eastampton and Pemberton Townships. Being at an important nexus of the farm route, improvements at this location would permit farm equipment to better navigate this intersection. These improvements provide operational and safety benefits and are less expensive than the construction of a connector road between CR 537 and Juliustown Road as suggested by the Parsons Brinckerhoff report cited earlier.

Short Term

- Trim foliage along US 206 to improve sight distance for vehicles exiting Juliustown Road.

Long Term

The long term improvement recommendations for this intersection are designed to work in concert with the recommendations for the US 206/CR 537 Monmouth Road intersection and cannot stand alone.

- Eliminate through movements on Juliustown Road. This will address safety issues and can be achieved by using signage and channelized right in, right out islands.
  - Incorporate a left turn lane and a shared through right turn lane on US 206 southbound at this location. Because there is no connector road between Juliustown Road and CR 537 Monmouth Road, this movement must be preserved.
  - Eliminate left turns from US 206 northbound to Juliustown Road westbound. These movements can be made at the signalized intersection of US 206 and CR 537 Monmouth Road, located 0.2 miles north. According to the 2000 peak hour traffic volumes listed in Figure 3-1 of the 2001 Parsons Brinckerhoff Report, *Route 206 Corridor Assessment Study*, this change would add 21 (combined a.m. and p.m.) left turn movements to the CR 537 intersection for a total of 41 left turns from US 206 northbound to Monmouth Road westbound. This would increase the combined a.m and p.m peak period US 206 northbound through movements by only 1.4% at Juliustown Road.
-

**8- Intersection of US 206 and Powell Road (CR 621)**  
Eastampton Township, Pemberton Township

Existing Conditions:

This location is at the border between Eastampton and Pemberton Townships. US 206 has one lane in each direction with 11 foot lanes and 9 foot shoulders. The posted speed limit on US 206 is 50 mph at this location. Powell Road (CR 621) is one lane in each direction and has an 11 foot westbound lane, a 13 foot eastbound lane, and a 2 foot shoulder eastbound. The intersection of US 206 and Powell Road is a T-intersection controlled by a stop sign. The speed limit on Powell Road is posted at 45 mph. CR 621 continues west from US 206 into Mount Holly Borough where it terminates at CR 537.

Identified Problems:

- The location of this intersection is at the bottom of a depression along US 206. This topography encourages increased speeds approaching the intersection on US 206 both northbound and southbound. As a result, vehicles entering US 206 from Powell Road have less time to complete the movement safely. Also, sight distance is poor from Powell Road due to the depression of US 206 and overgrown foliage along US 206 in both directions. These characteristics compromise the safety of this intersection.
- Vehicles queuing to turn left on to Powell Road from US 206 northbound are being passed on the shoulder by through traffic, creating an unsafe condition.

Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of Eastampton and Pemberton Townships.

Short Term

- Install “intersection ahead” warning signs on US 206 northbound and southbound.
- Reduce the posted speed limit on US 206 approaching the intersection.
- Explore other appropriate traffic calming measures.

Long Term

- Conduct a signal warrant analysis at this intersection to determine whether it should be signalized with a left turn lane for US 206 southbound.

**9- Intersection of US 206 and N. Main Street (CR 681)**  
Southampton Township

Existing Conditions:

This intersection is located in Southampton Township south of the NJ 38/US 206 intersection. US 206 has one 12 foot lane in each direction. US 206 southbound traffic access CR 681 via an off ramp of approximately 173 feet in length. This is where CR 681 begins. This alignment accommodates left turns from US 206 northbound to CR 681 and

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movements from CR 681 northbound to US 206 north and southbound. South of the intersection, CR 681 has one lane in each direction. US 206 northbound narrows from two lanes to one just south of the intersection.

Identified Problems:

- Left turns from US 206 northbound are difficult due to the high volumes and the high average speed of US 206 southbound traffic.
- US 206 northbound traffic utilizes the shoulder to pass vehicles queuing to turn left onto CR 681.
- Oblique angle and elevation difference between CR 681 and US 206 can compromise sight distance for CR 681 northbound traffic accessing US 206.

Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of Southampton Township.

- Prohibit left turns from US 206 northbound to CR 681.
- Redirect left turning vehicles from US 206 to CR 616 which is located less than 1 mile to the south of the intersection. This intersection is signalized and is a more logical and direct route for access to CR 681, Vincentown, and points west.
- Modify the gradient of CR 681 with US 206 at the intersection to improve sight distance.

**10- Red Lion Circle (US 206/NJ 70)**  
Southampton Township

Existing Conditions:

The Red Lion Circle, located in Southampton Township, is at the confluence of US 206 and NJ 70. The circle accommodates through movements and all turning movements to and from both NJ 70 and US 206. There are a total of 5 access points to the circle including direct access to the Red Lion Diner. Each approach and departure lane is approximately 30 feet wide. The center of the circle is an area landscaped with grass and trees. Both NJ 70 and US 206 have one lane in each direction at all approaches to the circle.

Identified Problems:

- Field observations revealed that a lack of lane markings caused indecision and confusion among motorists resulting in interruptions in the flow of traffic through the circle. The approaches to the circle are more than double the width of the travel lanes adding to the uncertainty and causing traffic congestion.
  - The circle as currently configured, appears to be unable to handle peak period traffic volumes.
-

Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of Southampton Township.

- Examine the feasibility of redesigning the circle as a signalized intersection.

**11- Intersection of CR 537 and Province Line Road**

North Hanover Township

Existing Conditions:

This is a four-leg intersection with stop signs for both northbound and southbound traffic on Province Line Road approaching CR 537. Province Line Road is the line of demarcation between Burlington, Ocean and Monmouth Counties. There are yellow intersection warning signs at the approach to the intersection on CR 537. CR 537 consists of one 12.5 foot lane in each direction with a 7 foot shoulder on the eastbound side and a 9 foot shoulder on the westbound side. Province Line Road is a two-lane road with 11 foot lanes in each direction. The northbound and southbound shoulder is 4 feet wide. The two western quadrants of the intersection are vacant lots. The southeastern quadrant contains a private house and the northeastern quadrant is a farm.

Identified Problems:

- High speeds on CR 537 makes access from Province Line Road in both directions difficult.
- The absence of left turn lanes on CR 537 results in through vehicles using the shoulders to get around vehicles turning left.

Potential Improvement Scenarios:

Improvements at this location will address circulation and mobility challenges in parts of North Hanover Township.

- Construct left turn lanes on east and westbound CR 537 to facilitate through movements on CR 537.
- Implement lower speed limits on CR 537 at the approaches to the intersection.
- Install a hazard identification beacon with a flashing yellow signal on CR 537 to alert motorists of the need to reduce speed approaching the intersection.

**Other Problem Locations**

Several other problem locations were identified from field views as well as from feedback from local officials. While these have a less direct impact on the operation of US 206, they do impact mobility at the local level. Below is a brief description of these secondary problem locations.

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**12- Intersection of Church Street and Main Street/Ward Avenue**  
Chesterfield TownshipExisting Conditions:

This intersection is a four-way intersection with stop signs regulating three directions.

Identified Problems:

- Traffic often backs up at the intersection during the AM and PM peak periods.

Potential Improvement Scenarios:

- Install traffic signals and adjust timing to give priority to the peak traffic flow.

**13- Intersection of Ellisdale Road and Ironbridge Road**  
Chesterfield TownshipExisting Conditions:

Harker Road acts as a connector between CR 528 and destinations in Mercer County.

Identified Problems:

- Ellisdale Road approaches the intersection at a curve which obscures sight distance for traffic traveling between Harker Road and Iron Bridge Road.

Potential Improvement Scenarios:

- Reduce speed limit on Ellisdale Road approaching the intersection.
- Install "Intersection Ahead" warning sign on Ellisdale Road.

**14- Intersection of CR 528 and Sykesville Road**  
Chesterfield TownshipExisting Conditions:

Sykesville Road is a two lane road that meets CR 528 at a T-intersection.

Identified Problems:

- Traffic traveling eastbound on CR 528 experiences difficulty turning on to Sykesville Road without encroaching on the opposing lane traffic.
- Traffic exiting Sykesville Road has to encroach beyond the stop sign at CR 528 in order to get sight clearance.

Potential Improvement Scenarios:

- The feasibility of a channelized right turn lane from CR 528 to Sykesville Road for eastbound traffic should be explored. This could improve the turn radius at this intersection.
-

**15- Intersection of CR 528 and CR 664**  
Chesterfield Township

Existing Conditions:

CR 528 intersects with CR 664 at a T-intersection. It has one lane in each direction with the northbound lane being 10 feet in width and the southbound lane being 12 feet in width. CR 664 is an east-west two lane highway with a posted speed limit of 50 MPH.

Identified Problems:

- Sight distance problem for traffic exiting CR 528 to CR 664. This results in encroachment into the travel lane of CR 664.

Potential Improvement Scenarios

- By realigning Harker Road with CR 528 and installing traffic signals, the transition of traffic from one road to the next will be improved.

**16- Intersection of CR 537 and Meany Road**  
North Hanover Township

Existing Conditions:

Meany Road acts as a connector between CR 537 and CR 616 (Cookstown-New Egypt Road). It forms a "T-Intersection" with CR 537. There are no traffic controls on CR 537 at the intersection while there is a stop sign on Meany Road.

Identified Problems:

- High speeds on CR 537 makes access to and from Meany Road difficult.

Potential Improvement Scenarios:

- Implement lower speed limits on CR 537 approaching Meany Road to allow better access for turning vehicles.

**17- Intersection of CR 528 and Meany Road**  
North Hanover Township

Existing Conditions:

This a four-way intersection. There are no traffic controls on CR 528 while there are stop signs in each direction for traffic on Meany Road. Meany Road has one northbound lane and one southbound lane - both approximately 10 feet in width.

Identified Problems:

- High speeds on CR 528 hinders access from Meany Road in both direction.

Potential Improvement Scenarios:

- If warranted, the speed limits on CR 528 should be lowered to facilitate easier access from Meany Road.
-

**18- Intersection of CR 528 and CR 537**

North Hanover Township

Existing Conditions:

This is a four-way signalized intersection between two East-West county roads. CR 537 has left-turn lanes in both directions.

Identified Problems:

- There is no protected phase for left-turning vehicles on both arterials.
- There are pedestrian actuated push buttons on CR 528, however, there are no crosswalks.
- There are potential conflicts with merging traffic after the channelized right-turns onto CR 537 from CR 528 due to a sharp merge.

Potential Improvement Scenarios:

- Implement a protected phase for left turning vehicles.
- Examine the need to add crosswalks and sidewalks for pedestrians.
- Study the feasibility of adding a longer merge area for right turns onto CR 537.

**19- Intersection of CR 537 and CR 665**

North Hanover Township

Existing Conditions:

This a four-leg intersection with flashing cautionary signals on both roads. CR 537 is the through road while there are stop signs on CR 665.

Identified Problems:

- High speeds and high volumes on CR 537 makes crossing CR 537 difficult.
- Vehicles on CR 537 eastbound approaching the intersection are only visible approximately 275 feet away from the intersection because of a steep drop in elevation away from the intersection.

Potential Improvement Scenarios:

- Because warning signs for the intersection are already in place on CR 537, a reduction in the speed limit should be considered.
-

**20- Intersection of Cookstown New Egypt Road (CR 616) and Meany Road; and  
Intersection of Cookstown Jacobstown Road (CR 665) and CR 616**

New Hanover and North Hanover Townships

Existing Conditions:

CR 665 ends at CR 616 creating a “T” intersection. Meany Road and CR 665 both connect to CR 528 and CR 537 to the north. Meany Road offers a more direct connection while CR 665 intersects CR 537 and CR 528 to the west of Meany Road. CR 616 connects with CR 667 to the south leading to the Village of Browns Mills. This is now the only major through route to Browns Mills since CR 545 and CR 669 are closed through Fort Dix and McGuire Air Force Base as a result of September 11, 2001.

Identified Problems:

- Because of the curve in CR 616 at the intersection with Meany Road, it is difficult for traffic on CR 616 to access Meany Road.
- Signage for the two intersections is very poor. Street names are marked, but the County route numbers are generally not present.

Potential Improvement Scenarios:

- Add a left turn lane for traffic turning onto Meany Road.
- Add signage that designates the route numbers as well as names for all roads.

**21- Intersection of Browns Mills Cookstown Road (CR 667), Hockamick Road and CR 616**

New Hanover Township

Existing Conditions:

This is a four-way intersection at the town center in Cookstown.

Identified Problems:

- Traffic has difficulty merging from CR 616 Wrightstown Cookstown Road onto CR 616 or CR 667 due to volume and an absence of traffic controls.

Potential Improvement Scenarios:

- Add traffic controls/signals to CR 616 Main Street/CR 667 Browns Mills Cookstown Road so that traffic can access the intersection during periods of high volume.

**22- NJ 68 and Mansfield Road East**

Mansfield Township

Existing Conditions:

Mansfield Road East intersects with NJ 68 at a T-intersection.

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Identified Problems:

- Traffic entering Mansfield Road East from NJ 68 northbound often experience delays due to an inadequate left turn lane. This is particularly critical in the AM peak when the capacity of the left turn lane is most inadequate. This is expected to be exacerbated once the new school on Mansfield Road East opens. An extension of the left turn lane would alleviate this problem.

Potential Improvement Scenarios:

- An extension of the left turn lane could alleviate this problem.

**23- Intersection of CR 537 and Juliustown-Georgetown Rd.**  
Springfield TownshipExisting Conditions:

This is an off-set intersection where both legs of Juliustown-Georgetown Road are controlled by stop signs and CR 537 is free flowing.

Identified Problems:

- Through traffic traveling on Juliustown-Georgetown Road must enter CR 537 for a short distance before turning left to continue on Juliustown-Georgetown Road. These vehicles are forced to queue in the CR 537 through traffic lane while waiting to turn left to continue on Juliustown-Georgetown Road

Potential Improvement Scenarios:

- Move the stop bar and stop sign on Juliustown-Georgetown Road closer to the intersection in accordance with AASHTO guidelines, to improve sight distance of oncoming traffic. In addition, the foliage on the east side of the intersection should be cut back.

**24- Intersection of Jacksonville-Jobstown Rd. (CR 670), Columbus-Jobstown Rd. and CR 537.**  
Springfield TownshipExisting Conditions:

This area involves two intersections along CR 537 located within 450 feet of one another. The first is CR 670 Jacksonville-Jobstown Road at CR 537 while the second is CR 670 Saylor's Pond Road at CR 537.

Identified Problems:

- Saylor's Pond Road experiences high volumes of traffic partly because it is a main access road to Checkpoint #9 of the military base located further east on this road. These moves are inhibited by poor sight distance on Saylor's Pond Road and high speeds of through traffic on CR 537.
-

Potential Improvement Scenarios:

- There is adequate shoulder along CR 537 eastbound to create a channelized right turn onto Saylor's Pond Road. The adjacent parcel of land is also vacant, which could accommodate a wider lane. This improvement could also incorporate a more gradual turning lane and remove the turning vehicles from the CR 537 main traffic flow.

**25- Intersection of US 206 and Jacksonville-Jobstown Road (CR 670)**  
Springfield Township

Existing Conditions:

This is a signalized four way intersection.

Identified Problems:

- This location was identified as problematic due to traffic delays on days the Columbus market is open. A field observation revealed that the intersection has been reconfigured to accommodate left turns, both northbound and southbound on US 206.

Potential Improvement Scenarios:

- Perform an analysis to evaluate the need for a protected left turn signal phase for traffic on US 206.

**26- Intersection of Burlington-Jacksonville Road (CR 670), Jacksonville Road (CR 628) and Smithville Road**  
Springfield Township

Existing Conditions:

This is a four way signalized intersection where CR 670, and CR 628 meet. Smithville Road intersects CR 628 south of the main intersection.

Identified Problems:

- No pedestrian amenities were present at any leg of this intersection.
- This signalized intersection seemed to function adequately. No vehicular problems were apparent during a field observation.

Potential Improvement Scenarios:

- Install striped cross-walks, pedestrian signals with push buttons, and pedestrian signage on all four approaches to the intersection.
-

**27- CR 630 between CR 537 and CR 684 Smithville**  
Eastampton TownshipExisting Conditions:

CR 630 is one lane in each direction with shoulders. The speed limit is 50 mph and the lane widths are 12 feet. Shoulder widths vary up to a maximum of 12 feet for the eastbound lane and are approximately 8 feet for westbound traffic.

Identified Problems:

- Local officials have expressed concerns about high speeds on CR 630 which make roads difficult to cross and access for vehicles and pedestrians.

Potential Improvement Scenarios:

- The speed limit designation should be evaluated based on accepted criteria established by the American Association of Highway and Transportation Officials (AASHTO).

**28- Intersection of CR 669 Juliustown Rd. and CR 668 Arney's Mount Road**  
Springfield TownshipExisting Conditions:

This is a four-leg intersection with stop signs for both northbound and southbound traffic on Arney's Mount Road approaching Juliustown Road. Both roads are one lane in each direction with lane widths between 11 and 12 feet.

Identified Problems:

- Poor sight distance from Arney's Mount Road of Juliustown Road traffic. This intersection is located at the crest of a hill which exacerbates the problem. The angle of the intersection also contributes to the sight distance problem.

Potential Improvement Scenarios:

- Reduce the speed limit on Juliustown Road approaching the intersection and install speed limit reduction signs in advance of the intersection.
- Study the feasibility of converting this intersection from a two-way stop to a four-way stop, with the appropriate advance warning signage.

**29- CR 537 Monmouth Road Between CR 630 and CR 684 Smithville Road**  
Eastampton TownshipExisting Conditions:

This stretch of road is one lane in each direction with shoulders. Traveling eastbound away from CR 630, the speed limit is initially posted at 40 mph. It changes to 50 mph further from the intersection.

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Identified Problems:

- Local officials have expressed concerns about high speeds on CR 630 which makes access difficult for vehicles and pedestrians.

Potential Improvement Scenarios:

- The speed limit designation should be evaluated based on accepted criteria established by the American Association of Highway and Transportation Officials (AASHTO).
- If the speed limit is determined to be correct and speeding is still a problem, there are a number of options to consider. Better signage and frequent ticketing by the police could help reduce speeds; however, relevant road design and traffic congestion are the best ways to decrease speeds without a need for constant police presence. On street parking and narrower lanes are some of the best traffic calming devices.

**30- Intersection of US 206 and Woodlane Road (CR 630)**

Eastampton Township, Pemberton Township

Existing Conditions:

US 206 and Woodlane Road (CR 630) are both 2 lane roads, both with a posted speed limit of 50 mph. At the signalized intersection of US 206 and Woodlane Road, the US 206 approaches widen to three lanes to accommodate left turns, through movements, and right turns. West of the intersection Woodlane Road's lanes measure 18 feet wide eastbound and 19 feet wide westbound. East of the intersection Woodlane Road has a 20 foot eastbound lane and a 17 foot westbound lane.

Identified Problems:

- Vehicles on Woodlane Road utilize the extra wide approach lane (18-19 feet) as two separate lanes to accommodate both left turns and shared through-right turn movements.

Potential Improvement Scenarios:

- The wide lanes on Woodlane Road should be re-stripped to accommodate both a left turn lane and a shared through-right lane.

**31- CR 621 Powell Road and CR 684 Smithville Road**

Eastampton Township

Existing Conditions:

This is a four-way unsignalized intersection. CR 684 is controlled by stop signs while traffic on CR 621 travels unimpeded.

Identified Problems:

- There are sight distance problems for northbound traffic on CR 684 entering CR 621.
-

- Local officials have expressed concern about accidents at this location. There were 17 accidents at this location between the years 1998-2000.

Potential Improvement Scenarios:

- Add controls to CR 621 such as a stop sign or an “intersection ahead” warning sign.

**32- CR 684 Smithville Road and NJ 38**  
Southampton Township

Existing Conditions

This is a four way unsignalized intersection in which CR 684 is offset. CR 684 is a two lane road and the northbound approach intersects NJ 38 slightly to the east of the southbound approach.

Identified Problems:

- There are sight distance problems for CR 684 Smithville Road on both approaches.
- High speeds on NJ 38 make access difficult.

Potential Improvement Scenarios:

- Signalizing the intersection would allow easier through movements and left turns and alleviate sight distance problems. If volumes on CR 684 are low, a loop detector could be used to regulate signal timing.

**33- Elizabeth Street (CR 687)**  
Pemberton Borough, Pemberton Township

Existing Conditions:

Elizabeth Street (CR 687) is used as a connector between Hanover Street (CR 616) and Pemberton-Browns Mills Road (CR 530) for traffic en route to and from the Fort Dix Military Base and Burlington County Community College.

Identified Problems:

- Elizabeth Street is experiencing congestion during the peak periods due in part to increased traffic as a result of road closures associated with the Fort Dix Military Base.

Potential Improvement Scenarios:

- Designate alternate route for accessing Fort Dix.
-

**34- Intersection of CR 530, CR 669 and CR 667; CR 667 and CR 545; and CR 530 and CR 545**

Pemberton Township and the Village of Browns Mills

Existing Conditions:

This is a complex area involving three intersections in the Village of Browns Mills. The three intersections form a triangle of land in the center with commercial development around all three intersections.

Identified Problems:

- There are many roads converging and many possible movements leading to congestion and circulation problems in the town center.
- Conflicts between local and through traffic.
- There are potential problems with left-turn capacity.

Potential Improvement Scenarios:

- Good signage directing traffic the shortest way through the town center. This will prevent through traffic from driving around the triangle of routes in the Town Center and creating more congestion.
- Examine the possibility of lengthening left-turn lanes

**35- Intersection of US 206 and New Road**

Southampton Township

Existing Conditions:

The intersection of US 206 and New Road is located in Southampton Township north of the Red Lion Circle. New Road meets US 206 NB at an angle. New Road is controlled by a stop sign.

Identified Problems:

- US 206 southbound through traffic was observed utilizing the shoulder to pass vehicles queuing to turn left onto New Road. Traffic trying to access US 206 from New Road experiences poor sight distances due to elevation differences in the road and the angle of the intersection.

Potential Improvement Scenarios:

- Widen this intersection to provide a left turn lane for access to New Road and a thru lane for US 206 SB traffic.

**36- Intersection of NJ 70 and Old Red Lion Road (CR 641)**

Southampton Township

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**Existing Conditions:**

The intersection of NJ 70 and Old Red Lion Road is located in Southampton Township west of the Red Lion Circle.

**Identified Problems:**

- NJ 70 thru traffic was observed utilizing the shoulder to pass vehicles queuing to turn left onto Old Red Lion Road (SB and NB).

**Potential Improvement Scenarios:**

- Widen NJ 70 to provide a left turn lane and a thru lane.

**37- Intersection of US 206 and Red Lion Road (CR 648)**

Southampton Township

**Existing conditions:**

At this intersection, both roads has one lane in each direction.

**Identified Problems:**

- Traffic turning left from US 206 southbound on to CR 648 must queue in the 206 thru lane while waiting for a break in the US 206 northbound traffic. This causes thru traffic to pass by utilizing the shoulder.

**Potential Improvement Scenarios:**

- It has been reported that the Lenape School district is financing the upgrading of this intersection to primarily to accommodate school related traffic.

**38- Intersection of NJ 70 and New Road**

Southampton Township

**Existing Conditions:**

The intersection of NJ 70 and New Road is the first signalized intersection located east of Red Lion Circle in Southampton Township. New Road is a local road with a northwest alignment that connects NJ 70 with US 206.

**Identified Problems:**

- NJ 70 thru traffic is utilizing the double wide lanes to pass vehicles queuing to turn left onto New Road. There were 9 recorded accidents at this location over the period 1998-2001.

**Potential Improvement Scenarios:**

- Re-stripe NJ 70 at the intersection to officially designate a left turn lane and a thru lane.
-

**39- Intersection of NJ 70 and Holly Boulevard**  
Southampton Township

Existing Conditions:

Holly Boulevard is the main entrance to the Hampton Lakes housing development located on the north side of NJ 70 in Southampton Township. It is east of the Red Lion Circle (US 206/NJ 70) between New Road and the Huntington Drive entrance to Leisuretowne, a senior citizen community.

Identified Problems:

- Left turning vehicles from NJ 70 eastbound onto Holly Boulevard are queuing in the NJ 70 thru lane. NJ 70 eastbound thru traffic is utilizing the shoulder to pass these left turning vehicles.

Potential Improvement Scenarios:

- Redesign intersection to create a left turn lane and a thru lane thus allowing thru traffic to pass in a designated lane.

**40- New High School along east side of CR 648 Red Lion Road**  
Southampton Township

Existing Conditions:

This location is along the east side of CR 648 near the intersection of Hawkin Rd.

Identified Problems:

- Potential increase in traffic utilizing the intersection of US 206 and CR 648 Red Lion Road when the Seneca High School in the Lenape School District is completed.

Potential Improvement Scenarios:

- Intersection improvements at US 206 and CR 648.

**41- NJ 70 and Spring Lake Boulevard**  
Pemberton Township

Existing Conditions:

This is a four way intersection between NJ 70 and Spring Lake Boulevard. There are no traffic controls for NJ 70 and stop signs for both approaches on Spring Lake Boulevard.

Problem Statement

- There are many vehicles turning left from NJ 70 eastbound onto Spring Lake Boulevard. When there is high volume in both directions, eastbound through traffic must slow and use the shoulder to pass vehicles queuing for left turns.

Potential Improvement Scenarios:

- Create a left-turn lane for NJ 70 eastbound for vehicles to turn onto Spring Lake Boulevard.
-

## **6.2 Background**

Development of a strategic implementation plan for the corridor is based upon the land use scenarios, the transportation needs and the economic development strategy, in conformance with the policy goals and objectives of the New Jersey State Plan, DVRPC's Year 2020 Land Use and Transportation Plan, and local municipal plans. This implementation plan will include a definition of the roles and responsibilities of all affected agencies for each improvement project.

The *Route 130/Delaware River Corridor Extension Route 206/Farmbelt Corridor Transportation and Circulation Study* can be used as a dynamic long range tool for the systematic selection of projects to create a significantly improved transportation system within the study area. This document can serve as a *punch list* for the government agencies with a stake in the implementation of improvements. Municipal governments are key players in this process. Even though a highway may be maintained by the state or county, it is the welfare of the local residents which is affected the most. Safety and mobility benefits are felt more by those who use the highway frequently. Therefore, the local municipality should assure that the improvements are advanced expediently by being involved in the process no matter which agency has a lead role.

### **Characteristics**

In choosing which projects should advance first, stakeholders can be guided by the information presented in **Table 8** *Route 130/Delaware River Corridor Extension Route 206/Farmbelt Corridor Transportation and Circulation Study Transportation Improvements Implementation Matrix*. This easy to use matrix suggests the relative importance to stakeholders of the various attributes of each problem location. Each improvement scenario, identified is evaluated in terms of project priority, cost range and project benefits. The stakeholders necessary to carry out the plan are also identified.

#### *Priority*

Priorities are estimated in terms of three categories: high, moderate and low. Priorities are assigned based on the perception of the extent of the problems they present drivers, with safety being most important, but congestion (or time delay) and mobility also being considered. A higher degree of priority is also assigned if there is an urgency to complete the improvement due to the imminent completion of a nearby major investment (development or transportation improvement). If there is concern that a section of right-of-way needed to complete an improvement is in danger of being developed or used for another use, the priority to act on that improvement is also heightened. If a project is relatively small scale and low cost, yet offers a projected high benefit, it also receives a higher priority ranking.

#### *Cost Range*

Costs are also assigned to categories of high, moderate and low. High cost projects usually involve a major commitment from one or more funding source, lengthy public involvement and several years lead time in programming the required funds. They are typically large scale, complex or multi-phased improvements and can entail the construction of new facilities. In general, a project in this category is estimated to cost between \$5 and \$35 million, however some major projects have been known to cost in the hundreds of millions of dollars. An improvement estimated to have a moderate cost could involve a major reconstruction of an intersection, construction of a short

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connector road or a widening of an existing road. In general, a project in this category is estimated to cost between \$2 and \$5 million. Low cost projects can often be fast-tracked with maintenance, or pool funding. They are often operational type improvements at isolated locations and typically cost less than \$2 million. These cost ranges are generalized estimates and could be significantly changed for a specific location due to environmental, right-of-way or other factors uncovered during detailed design of the improvement.

### ***Benefits***

Benefits describe the kind of impact the improvement will yield, such as enhancing safety, lessening congestion, improving mobility or encouraging economic development. Economic development benefits are derived from a transportation improvement generally through an increase in the accessibility of affected individual properties or areas. The strategic location and magnitude of the improvement determines the extent of the benefits received by the affected properties. The increased level of access to a property may make it attractive enough to induce new commercial or residential development or entice existing land uses to expand. Increased accessibility can also have a positive effect on property values.

### ***Roles of Agencies***

In terms of a hierarchy of agencies, the New Jersey Department of Transportation (NJDOT) is primary, both in terms of maintaining US 130, US 206, NJ 38, NJ 68 and NJ 70 as well as providing much of the design, right-of-way and construction funding for major improvements. Municipalities make land use decisions in the corridor, which ultimately affect traffic levels within the corridor. In addition, many of the cross streets are designed, built and maintained by local and county government, and these also impact how well the state routes function. Lastly, developers actually build the housing, commercial and industrial projects which generate the trips which must be accommodated by a publicly-owned transportation infrastructure. In addition, some the transportation improvements themselves are designed and financed by developers.

### ***New Jersey Department of Transportation***

NJDOT has jurisdiction over the state highways in the corridor. These include I-295, US 206, US 130, NJ 38, NJ 68 and NJ 70. Improvements to these highways are typically financed by state and/or federal funds. Occasionally, developer contributions are also a source of funding if the project has special impact by a development. The State ultimately makes the decision on what improvements are done to their facilities but often coordinates with the county or local municipalities when the improvements include facilities under their jurisdiction.

### ***Burlington County***

The county has jurisdiction over a network of roads throughout the study area. In New Jersey, county roads are given 500, 600 or 700 route designations. There are several 600 series routes within the study area: CR 616, CR 621, CR 630, CR 642, CR 643, CR 644, CR 663, CR 665, CR 666, CR 668, CR 669, CR 672, CR 680, and CR 685. Most of the county roads in the corridor serve as access roads into or across US 206. The primary function of the county network is to serve medium range trips or to serve as feeders to the state system. Improvements to county roads are financed by county dollars or where eligible can they can receive federal or state funding. The county has the ultimate decision concerning improvements on county roads but typically coordinates with the municipality in which the improvement is located.

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*Metropolitan Planning Organization (MPO)*

DVRPC, serving as the MPO for this region, is required to coordinate a comprehensive and continuing transportation planning process. This process results in the development of a Transportation Improvement Program (TIP) which identifies all priority projects for which federal funds will be sought. The TIP represents a consensus among state and regional officials as to what regional improvements are to be made. In addition to the TIP, the MPO is required by federal legislation to develop a long range plan to help direct region-wide transportation decision making over a period of at least 20 years. Long range plans do not specify the design of actual projects. Rather, they identify future needs to address transportation deficiencies.

*Municipalities*

Local governments not only have jurisdiction over their local road system they also control local land use decisions. The decisions made at the local level can effect the traffic on roads at all levels. Therefore, local officials must understand the traffic impacts which could be generated from a particular development and understand the synergy that exists between land use decisions and transportation improvements. Local officials need to be involved in the transportation planning process for all levels of transportation improvements to make sure that the concerns of their residents are addressed and to assist in the problem identification and improvement recommendations. Municipal officials need to make use of the circulation element of their Master Plan to identify important missing links in their highway network and begin to preserve space for these links to be built. The Master Plan is an important tool for municipalities to use in addressing their circulation needs.

*Developers*

As properties are developed or redeveloped, the transportation needs of the properties can change, sometimes drastically. Providing proper transportation access to a new development is often critical to the success of that development. Therefore, developers must work with the transportation providers to assure that the necessary changes are beneficial to both the development and the existing transportation infrastructure. Developers frequently design and construct improvements for traffic attributable to their developments or to provide enhanced access to their site.

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**TABLE 8**  
**Transportation Improvement Implementation Matrix**

<i>Location</i>	<i>Priority</i>	<i>Cost Range</i>	<i>Benefits</i>	<i>Lead Role</i>	<i>Assisting Role</i>
1 Intersection of US 130 and Farnsworth Avenue (CR 545) (Bordentown Twp.)	M	L	Cong, Mobil, Safe	DOT	Co, MCD
2 Intersection of US 206 and Georgetown Road (CR 545) / Farnsworth Avenue. (Bordentown Twp.)	M	L	Safe, Mobil	DOT	Co, MCD
3 Intersection of Old York Road (CR 660) at Rising Sun Road, and Old York Road at US 206 (Bordentown Twp.)	H	H	Safe, Cong, Mobil	DOT	Co, MCD
4 Mansfield Road East, Mansfield Road West at US 206 (Mansfield Twp.)	H	M	Safe, Mobil	DOT	Co, MCD
5 Intersection of Columbus-Hedding Road (CR 678) and US 206 (Mansfield Twp.)	L	L	Safe, Mobil	DOT	MCD, Co
6 Intersection of US 206 and Monmouth Road (CR 537) (Springfield Twp.)	H	M	Cong, Mobil, Safe	DOT	Co, MCD
7 Intersection of US 206 and Juliustown Road (CR 669) (Springfield Twp.)	H	M	Cong, Safe, Mobil	DOT	MCD, Co
8 Intersection of US 206 and Powell Road (CR 621) (Eastampton Twp., Pemberton Twp.)	L	L	Safe, Mobil	DOT	Co, MCD
9 Intersection of US 206 and N. Main Street (CR 681) (Southampton Twp.)	L	L	Safe, Mobil	DOT	Co, MCD

**TABLE 8**  
**Transportation Improvement Implementation Matrix**

<i>Location</i>	<i>Priority</i>	<i>Cost Range</i>	<i>Benefits</i>	<i>Lead Role</i>	<i>Assisting Role</i>
10 Red Lion Circle (US 206/NJ 70) (Southampton Twp.)	H	M	Safe, Mobil	DOT	Co, MCD
11 Intersection of CR 537 and Province Line Road (North Hanover Twp.)	L	L	Safe	Co	MCD
12 Intersection of Church Street and Main Street/Ward Avenue (Chesterfield Twp.)	L	L	Cong, Mobil, Safe	Co	MCD
13 Intersection of Ellisdale Road and Ironbridge Road (Chesterfield Twp.)	L	L	Safe	Co	MCD
14 Intersection of CR 528 and Sykesville Road (Chesterfield Twp.)	L	L	Safe	Co	MCD
15 Intersection of CR 528 and CR 664 (Chesterfield Twp.)	L	M	Mobil, Safe	Co	MCD
16 Intersection of CR 537 and Meany Road (North Hanover Twp.)	L	L	Safe	Co	MCD
17 Intersection of CR 528 and Meany Road (North Hanover Twp.)	L	L	Safe	Co	MCD
18 Intersection of CR 528 and CR 537 (North Hanover Twp.)	L	L	Safe	Co	MCD
19 Intersection of CR 537 and CR 665 (North Hanover Twp.)	L	L	Safe	Co	MCD

**TABLE 8**  
**Transportation Improvement Implementation Matrix**

<i>Location</i>	<i>Priority</i>	<i>Cost Range</i>	<i>Benefits</i>	<i>Lead Role</i>	<i>Assisting Role</i>
20 Intersection of CR 616 Cookstown New Egypt Road and Meany Road; and Intersection of CR 665 Cookstown-Jacobstown Road and CR 616 (North Hanover Twp., New Hanover Twp.)	L	L	Safe	Co	MCD
21 Intersection of CR 667 Browns Mills-Cookstown Road, Hockamick Road and CR 616 (New Hanover Twp.)	L	L	Safe	Co	MCD
22 NJ 68 and Mansfield Road East (Mansfield Twp.)	H	L	Safe, Cong, Mobil	DOT	Co, MCD
23 Intersection of CR 537 and Juliestown-Georgetown Rd. (Springfield Twp.)	L	L	Safe, Mobil	Co	MCD
24 Intersection of CR 670 Jacksonville-Jobstown Rd., Columbus-Jobstown Rd. and CR 537. (Springfield Twp.)	H	L	Safe, Mobil	Co	MCD
25 Intersection of US 206 and CR 670 Jacksonville-Jobstown Road (Springfield Twp.)	L	L	Cong, Mobil	DOT	Co, MCD
26 Intersection of CR 670 Burlington-Jacksonville Road, CR 628 Jacksonville Road, and Smithville Road (Springfield Twp.)	L	L	Mobil	Co	MCD
27 CR 630 between CR 537 and CR 684 Smithville (Eastampton Twp.)	L	L	Safe, Mobil	Co	MCD

**TABLE 8**  
**Transportation Improvement Implementation Matrix**

<i>Location</i>	<i>Priority</i>	<i>Cost Range</i>	<i>Benefits</i>	<i>Lead Role</i>	<i>Assisting Role</i>
28 CR 630 between CR 537 and CR 684 Smithville (Springfield Twp.)	L	L	Safe	Co	MCD
29 CR 537 Monmouth Road Between CR 630 and CR 684 Smithville Road (Eastampton Twp.)	L	L	Safe	Co	MCD
30 Intersection of US 206 and CR 630 Woodlane Road (Eastampton Twp., Pemberton Twp.)	M	M	Safe, Mobil	DOT	Co, MCD
31 CR 621 Powell Road and CR 684 Smithville Road (Eastampton Twp.)	H	L	Safe	Co	MCD
32 CR 684 Smithville Road and NJ 38 (Southampton Twp.)	M	L	Safe, Mobil	DOT	Co, MCD
33 Elizabeth Street (CR 687) (Pemberton Boro, Pemberton Twp.)	H	M	Cong, Mobil	Co	MCD
34 Intersection of CR 530, CR 669 and CR 667; CR 667 and CR 545; and CR 530 and CR 545 (Pemberton Boro, Village of Browns Mills)	M	M	Cong, Safe, Mobil	Co	MCD
35 Intersection of US 206 and New Road (Southampton Twp.)	M	L	Safe, Mobil	DOT	Co, MCD
36 Intersection of NJ 70 and Old Red Lion Rd. (CR 641) (Southampton Twp.)	M	L	Safe, Mobil	DOT	Co, MCD
37 Intersection of US 206 and Red Lion Rd.(CR 648) (Southampton Twp.)	M	L	Safe, Mobil	DOT	Co, MCD

**TABLE 8**  
**Transportation Improvement Implementation Matrix**

<i>Location</i>	<i>Priority</i>	<i>Cost Range</i>	<i>Benefits</i>	<i>Lead Role</i>	<i>Assisting Role</i>
38 Intersection of NJ 70 and New Road (Southampton Twp.)	M	L	Safe	DOT	Co, MCD
39 Intersection of NJ 70 and Holly Blvd. (Southampton Twp.)	M	L	Safe	DOT	Co, MCD
40 New High School along east side of CR 648 Red Lion Rd. (Southampton Twp.)	M	L	Safe, Mobil	Co	MCD
41 NJ 70 and Spring Lake Boulevard (Pemberton Twp.)	M	L	Safe	DOT	Co, MCD

**Key:**

*Priority:* H = High, M = Moderate, L = Low  
*Cost Range:* H = High, M = Moderate, L = Low  
*Benefits:* Cong = Congestion, Mobil = Mobility, Safe = Safety,  
*Role:* MCD = municipality, Co = county, DOT = NJ Department of Transportation,



# **APPENDIX**

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## Appendix A

### Transportation Committee Members

<u>MUNICIPALITY</u>	<u>FIRST NAME</u>	<u>LAST NAME</u>	<u>TITLE</u>
Bordentown City	Michael A.	Hunninghake	Chairman, Environmental Commission
Bordentown Township	Thomas	Coppolecchia	Resident
Bordentown Township	Mark	Roselli	Committeeman
Chesterfield Township	Donald	Czehut	Resident
Chesterfield Township	G. Richard	Lange	Resident
Chesterfield Township	Joseph	Malison	Chairman, Planning Board
Eastampton Township	Thomas	Czerniecki	Township Manager
Eastampton Township	George	Paneque	Councilman
Mansfield Township	Joe	Lawrence	Chairman, Planning Board
New Hanover Township	Dennis J.	Roohr	Committeeman
North Hanover Township	Albert J.	Dempster, Jr.	Committeeman
Pemberton Borough	Bill	Kochersperger	Committeeman
Pemberton Township	Frank	Banisch	Former Township Planner
Pemberton Township	Maurice	Jones	UEZ Coordinator
Southampton Township	C. Edman	Budd	Committeeman
Southampton Township	Dennis	DeKlerk	Assessor
Southampton Township	Robert	Moore	Committeeman
Southampton Township	Jack	Lipsett	Township Clerk/Administrator
Springfield Township	Jo	Jacques	Chair, Planning Board
Wrightstown Borough	Rick	Ragan	Borough Planner
Wrightstown Borough	Brian	Sperling	Councilman



**Title of Report:**        *Route 130/Delaware River Corridor Extension Route 206/Farmbelt Corridor  
Transportation and Circulation Study*

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**Publication No.:** 03021

**Date Published:** June 2003

**Geographic Area Covered:**

The study area includes or is adjacent to the following Burlington County municipalities: Bordentown City, Bordentown Twp, Chesterfield Twp, Eastampton Twp, Fieldsboro Boro, Mansfield Twp, New Hanover Twp, North Hanover Twp, Pemberton Boro, Pemberton Twp, Southampton Twp, Springfield Twp and Wrightstown Boro.

**Key Words:**

traffic counts, intersection analysis, improvement options, trip generators, sight distance, aviation, speed limit, agricultural route, travel forecasting, accidents

**ABSTRACT:** *This is the transportation and circulation element of a strategic plan for the northeastern region of Burlington County along the US 206 and US 130 corridors. This study was developed using a consensus-based, approach with input from the corridor communities as well as state, county and regional agencies in the identification of transportation problems. Detailed field views and technical analysis were conducted to identify and quantify the transportation problem areas and document practical solutions. A detailed write-up of the existing conditions, identified problems and potential improvement scenarios is presented. The present and future traffic conditions on selected arterials were analyzed using the DVRPC regional simulation model. 2025 traffic volumes on 41 arterial segments in the corridor were developed using different land use scenarios. An agricultural route network was identified which represents the preferred transportation network by farmers in the area to facilitate mobility of farm equipment between farms, as well as goods movement to and from farms. Current constraints and deficiencies to this route have been documented and necessary improvements identified. A strategic implementation plan was developed to be used as a dynamic long range tool for the systematic selection of projects to create a significantly improved transportation system within the study area.*

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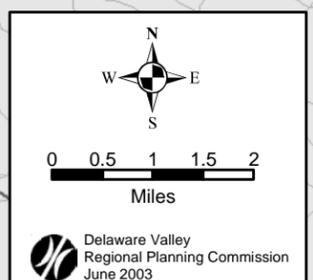
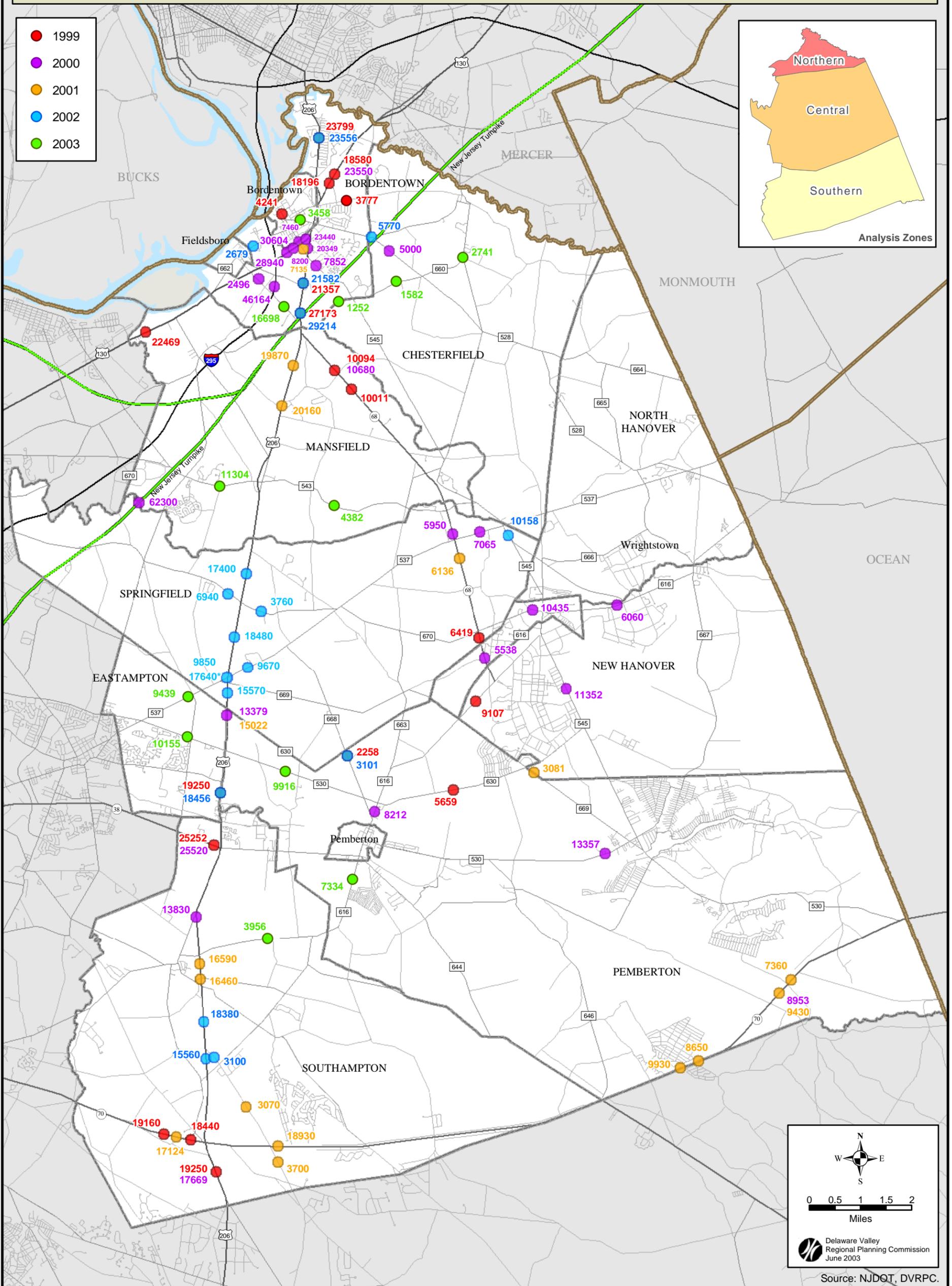
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# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 2:  
Traffic  
Volumes  
(1999 - 2003)

- 1999
- 2000
- 2001
- 2002
- 2003



Delaware Valley  
Regional Planning Commission  
June 2003

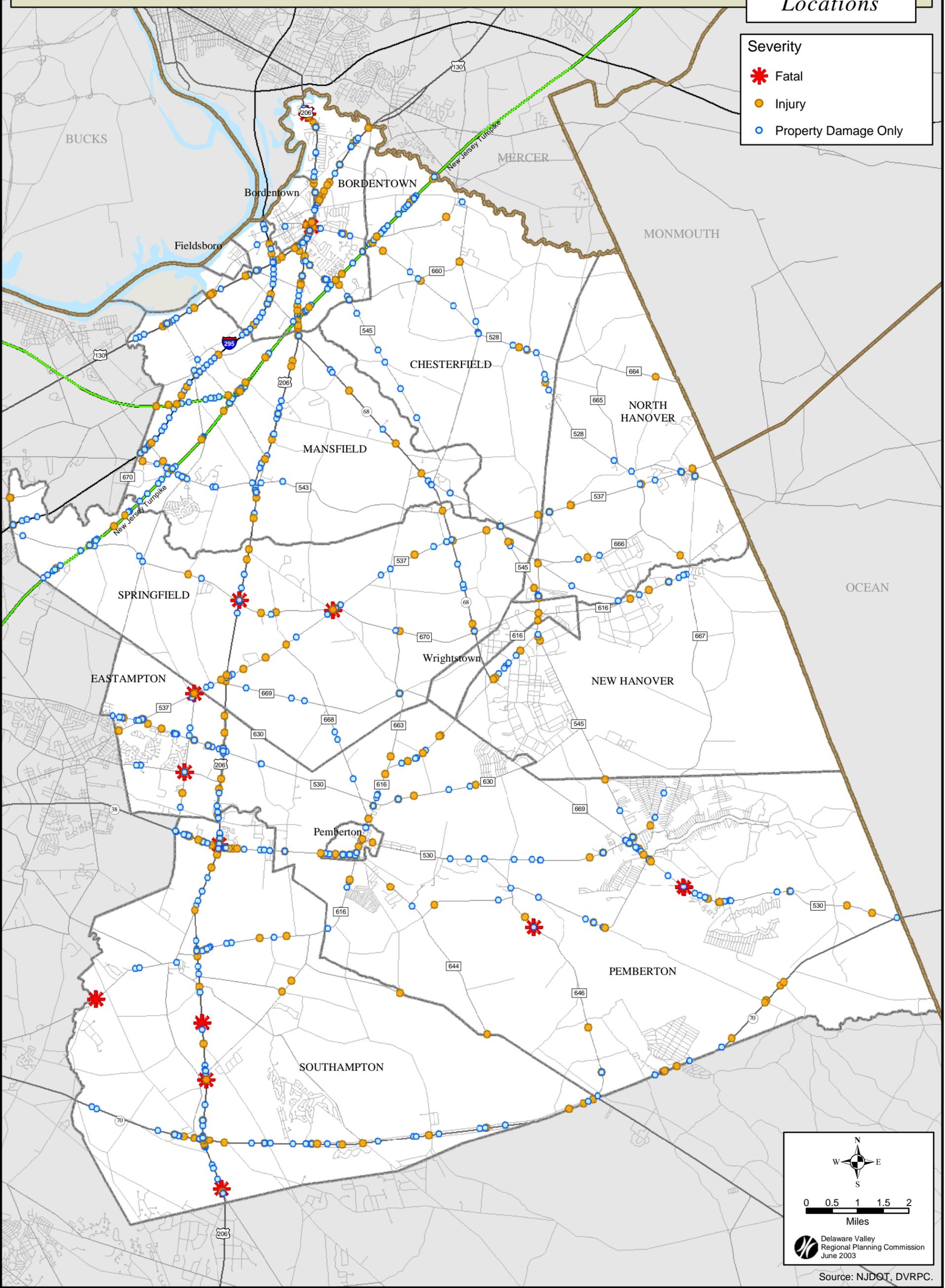
Source: NJDOT, DVRPC.

# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

Map 3:  
2001  
Corridor-wide  
Accident  
Locations

**Severity**

- ✱ Fatal
- Injury
- Property Damage Only



0 0.5 1 1.5 2  
Miles

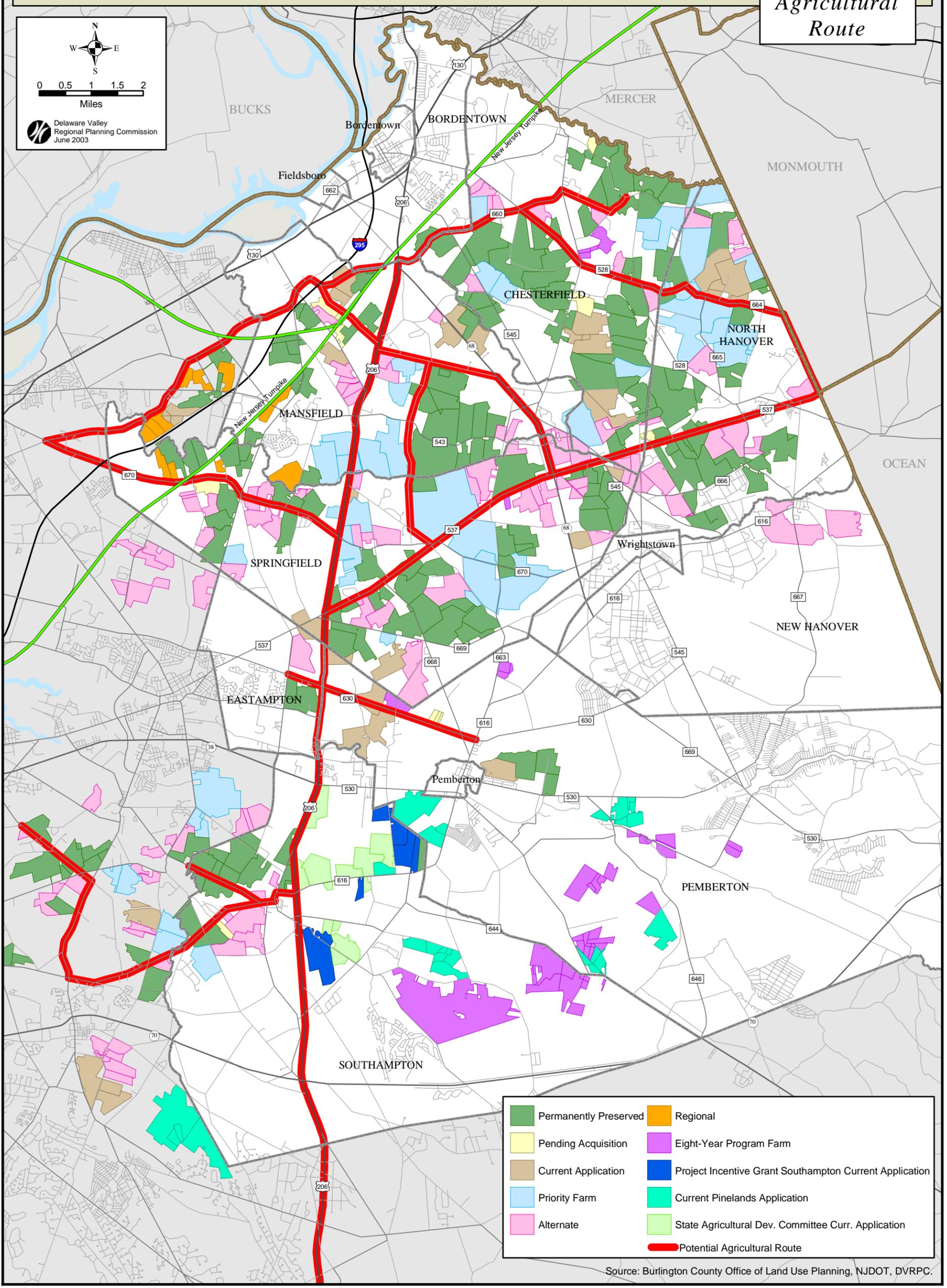
Delaware Valley  
Regional Planning Commission  
June 2003

Source: NJDOT, DVRPC.

# US 130/ Delaware River Corridor Extension US 206/ Farmbelt Corridor Transportation and Circulation Study

*Map 5:  
Preserved  
Farmland and  
Potential  
Agricultural  
Route*

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June 2003



Permanently Preserved	Regional
Pending Acquisition	Eight-Year Program Farm
Current Application	Project Incentive Grant Southampton Current Application
Priority Farm	Current Pinelands Application
Alternate	State Agricultural Dev. Committee Curr. Application
	Potential Agricultural Route

Source: Burlington County Office of Land Use Planning, NJDOT, DVRPC.