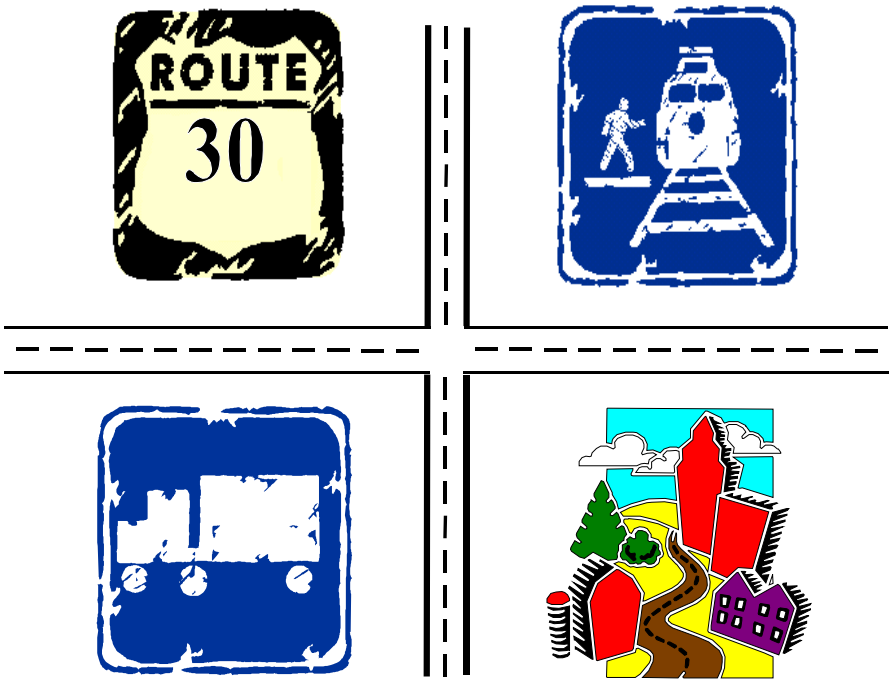
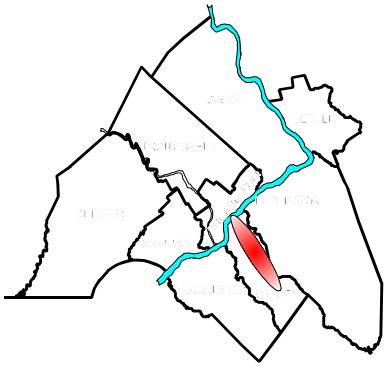


US 30 Corridor Study

Camden County, New Jersey

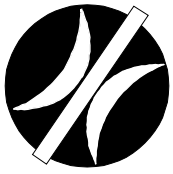


YEAR 2020 PLANNING CORRIDORS
REPORT 6

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

US 30 CORRIDOR STUDY

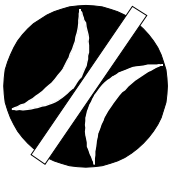
Camden County, New Jersey



Delaware Valley Regional Planning Commission
The Bourse Building
111 S. Independence Mall East
Philadelphia, PA 19106
www.dvrpc.org

July 2002

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



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

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

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I. EXECUTIVE SUMMARY

This document presents a transportation improvement plan for the US 30 Corridor in Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case US 30 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention and who is responsible to get these projects moving to the next step. Specific transportation problem locations identified through the planning process are presented in this report. Additionally, similar problems and issues kept coming up in meetings with corridor stakeholders and field views. Those reoccurring items are addressed separately in this report in a section that deals with corridor-wide problems and strategies.

The Delaware Valley Regional Planning Commission (DVRPC) was requested by the New Jersey Department of Transportation (NJ DOT) to conduct a corridor planning effort which addressed issues affecting transportation and mobility. A steering committee, composed of representatives of the municipalities located along the corridor, NJ DOT and the Cross County Connection Transportation Management Association (CCCTMA) played an active role throughout the study process and were especially vital to DVRPC's efforts in preparing the corridor study. The participants from the series of municipal meetings are listed in the appendix. The designated study area contains the transportation facilities relevant to US 30. This boundary was used as a guide to identify traffic and transportation issues that have an impact on US 30. All background analysis and data is based on the corridor study area municipalities in their entirety.

The 23 study area municipalities are: Audubon Borough, Barrington Borough, Berlin Borough, Berlin Township, Camden City, Cherry Hill Township, Clementon Borough, Collingswood Borough, Haddonfield Borough, Haddon Heights Borough, Haddon Township, Hi-Nella Borough, Lawnside Borough, Laurel Springs Borough, Lindenwold Borough, Magnolia Borough, Oaklyn Borough, Pennsauken Township, Somerdale Borough, Stratford Borough, Tavistock Borough, Voorhees Township, and Woodlynne Borough. Several municipalities declined to participate in field visits to discuss transportation issues. In such cases, the majority of the municipality fell outside the study area or the impact of the US 30 corridor on a municipality's residents was peripheral. Those municipalities not participating were: Cherry Hill Township, Berlin Borough, Hi-Nella Borough, Pennsauken Township, Tavistock Borough and Voorhees Township. DVRPC has kept them appraised of the progress of the study.

The report includes background data pertaining to the corridor's demographics (including population and employment forecasts), land use, traffic volumes, accident statistics, transit and bicycle facilities, Intelligent Transportation System components, Environmental Justice and prior studies. This information provides valuable insight into the issues affecting the corridor and helps determine pertinent strategies. Following the description of existing conditions, identified problems and potential improvement scenarios (both corridor-wide and location

specific) are presented along with aerial photographs and figures. Each improvement scenario has been developed in relation to its ability to solve existing or potential problems or deficiencies and are considered worthy of future action. Transportation improvements at these locations will have important implications for the economic vitality of the local areas as well as the quality of life and mobility of the corridor as a whole. An emphasis was placed on intermodal facility strategies due to the need to strengthen the links between transportation and existing land uses within the corridor.

This document also lists those problem locations in the corridor which have been previously identified and are either programmed for implementation on DVRPC's FY 2002 Transportation Improvement Program (TIP), listed on NJ DOT's FY 2002-2004 Study and Development Program, identified on DVRPC's Problem Identification and Prioritization report, identified as part of DVRPC's Long Range Plan (LRP) or identified in NJ DOT's US 30 Corridor Needs Assessment Study and NJ 73 Corridor Needs Assessment Study. By including these projects, this corridor plan becomes as comprehensive as possible in identifying the transportation needs of the corridor. These items are intended to be a complementary listing to the recommendations of this report.

A Congestion Management System (CMS) analysis for the corridor is also included in the report. This section identifies congested facilities within the corridor and recommends CMS strategies at a sub-corridor level. This analysis is a refinement of the macro-scale evaluation contained in the *New Jersey Congestion Management System Report*, which serves as the operational CMS for the New Jersey region of DVRPC.

II. BACKGROUND

REGIONAL SETTING

The focus of this corridor study is US 30 in Camden County, New Jersey (Map 1). The study limits are Camden City to Berlin Borough, totaling 17.37 linear miles. The study area considers adjacent, parallel and intersecting facilities. The 23 study area municipalities are: Audubon Borough, Barrington Borough, Berlin Borough, Berlin Township, Camden City, Cherry Hill Township, Clementon Borough, Collingswood Borough, Haddonfield Borough, Haddon Heights Borough, Haddon Township, Hi-Nella Borough, Lawnside Borough, Laurel Springs Borough, Lindenwold Borough, Magnolia Borough, Oaklyn Borough, Pennsauken Township, Somerdale Borough, Stratford Borough, Tavistock Borough, Voorhees Township, and Woodlynne Borough.

Map 2 shows the study area boundaries. Comprised of predominantly older, first generation, suburban boroughs, the study area has a fairly consistent character throughout. US 30, known locally as the White Horse Pike from the Collingswood Circle eastward, is the main east-west facility serving the boroughs and townships of Camden County. The White Horse Pike also serves as the main street and central business district for several of the corridor municipalities including Oaklyn, Magnolia, Somerdale and Berlin boroughs. Although a few larger employers are located in the study area, the local economy is heavily based in the retail and service industries.

The study area communities are densely populated and have little or no available land for new development with the exception of Voorhees Township, which unlike most of Camden County has experienced growth in population and employment over the last 20 years. This is consistent with the trend of suburbanization of the outer ring communities across the United States. Growth and development in the core/inner communities will take the form of redevelopment and infill centering on US 30. Due to the established nature of the corridor's transportation infrastructure, the vitality of these communities depends on mobility through the corridor and access to employment and service centers. A focus on efficient and innovative mass transit options, including the PATCO High Speed Line, will help retain the high quality of life and small town atmosphere that is the greatest asset of these communities.

POPULATION

According to the 2000 Census, Camden County has 508,932 people, making it the fifth most populated county in the DVRPC region and the largest of the New Jersey counties. Of the county's 37 municipalities, 31 have populations under 20,000 people. The 23 municipalities which comprise the corridor study area are predominantly older communities with established populations, except for Voorhees Township which has a growing population. Tavistock Borough is excluded from the population data due to its small population. This decision was made so as to not skew the results when computing and analyzing corridor-wide average statistics. As can be seen on the study area map (Map 2), most of the study area boroughs and

US 30 Corridor Study

Map 1

Regional Setting

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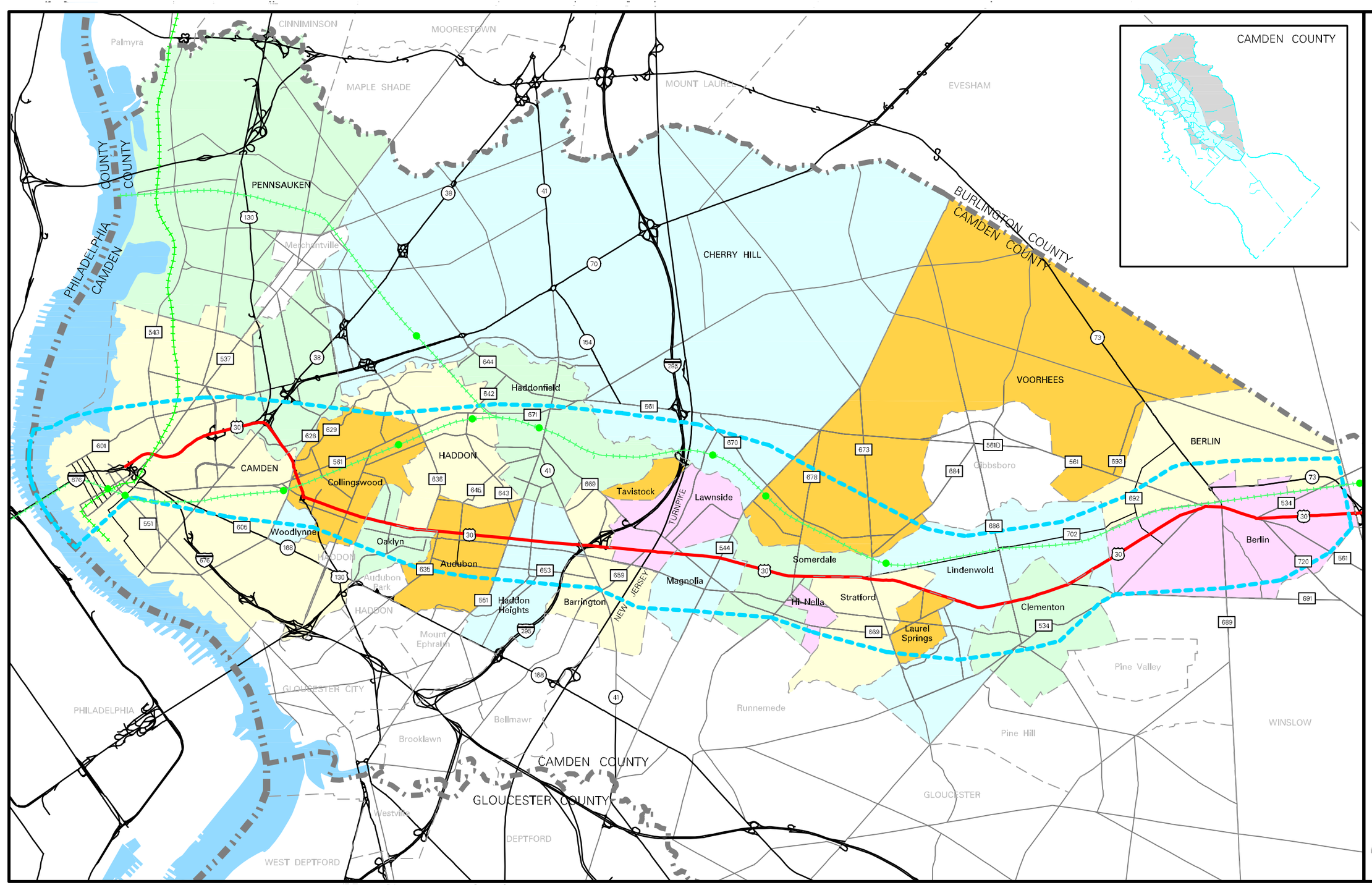


US 30 Corridor Study

Map 2

Study Area

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
July 2002

townships are relatively small in terms of land area. This is also the case in terms of population. According to the year 2000 Census, 14 of the 23 study area municipalities had a population of less than 10,000. The study area also includes Camden City (79,904), Cherry Hill Township (69,965), and Pennsauken Township (35,737) three of the top four most populated communities in Camden County. In terms of population size and total land area, these municipalities are uncharacteristic of the other 20 boroughs and townships in the study area. With a 2000 population of 341,567, the US 30 Corridor study area municipalities accounts for 67% of Camden County's 508,932 residents.

The population of the study area municipalities has been on a steady decline for over 20 years (Table 1). Between 1980 and 2000 only 5 of the 23 municipalities experienced a growth in population. The remaining towns saw declines of between .08% in Oaklyn Borough to 17.7% in Hi-Nella Borough, with an average decline of 8.16% corridor-wide. The following municipalities experienced population gains for the same period: Voorhees Township (177%), Woodlynne Borough (8.5%), Berlin Borough (6.3%), Pennsauken Township (5.8%), and Cherry Hill Township (1.7%). Despite the population decline in the majority of the county's municipalities, Camden County overall has grown by 7.9% since 1980. This is due to the significant growth in eastern Camden County where Gloucester, Voorhees, Winslow, and Waterford Townships collectively added over 51,000 residents between 1980 and 2000. As is the trend outward from the urban core, the areas with available land for development have shown the greatest population increases. Although these municipalities lie outside of the immediate study area, their growth has transportation impacts within the study area because of US 30's use as a major arterial route.

Comparing DVRPC's year 2025 population forecast of the study area municipalities to the county as a whole, Camden County is projected to grow by 1% while the study area is projected to experience an average decline of 6%, or 21,947 residents. Audubon, Collingswood, and Lawnside boroughs are all forecasted to experience declines of 16% by 2025. Most municipalities will see double digit population declines of between 10-15%, while only Berlin (2%) and Lindenwold (1%) boroughs will show more modest losses of less than 5%. Voorhees Township will grow by 27% and the remaining 21 municipalities will lose population by an average of 11%.

The age profile of the corridor municipalities supports the declining population numbers. According to the 2000 Census, the average percentage of residents aged 65 years and older is higher (14%) than the county average (12.5%) in over 75% of the study area municipalities. Haddon Township, Lawnside Borough and Haddon Heights Borough had the top three senior citizen populations of 20%, 18.8%, and 18.2% respectively. A high percentage of elderly people combined with an average number of school aged children (county = 22%, study area = 21%) as compared to working-aged residents creates an increase in the need for services, i.e.: schools and senior housing. This has the potential to create a burden on the tax base.

TABLE 1: 1980-2000 POPULATION BY MINOR CIVIL DIVISION AND 2025 FORECAST

Municipality	1980 Census	2000 Census	2025 Forecast	Absolute Change '80-'00	% Change '80-'00	Absolute Change '00-'25	% Change '00-'25
Audubon Boro.	9,533	9,182	7,730	(351)	-3.7%	(1,452)	-16%
Barrington Boro.	7,418	7,084	6,350	(334)	-4.5%	(734)	-10%
Berlin Boro.	5,786	6,149	6,040	363	6.3%	(109)	-2%
Berlin Twp.	5,348	5,290	4,790	(58)	-1.1%	(500)	-9%
Camden City	84,910	79,904	73,900	(5,006)	-5.9%	(6,004)	-8%
Cherry Hill Twp.	68,785	69,965	65,050	1,180	1.7%	(4,915)	-7%
Clementon Boro.	5,764	4,986	4,290	(778)	-13.5%	(696)	-14%
Collingswood Boro.	15,838	14,326	11,970	(1,512)	-9.5%	(2,356)	-16%
Haddon Heights Boro.	8,361	7,547	6,480	(814)	-9.7%	(1,067)	-14%
Haddon Twp.	15,875	14,651	12,800	(1,224)	-7.7%	(1,851)	-13%
Haddonfield Boro.	12,337	11,659	10,500	(678)	-5.5%	(1,159)	-10%
Hi-Nella Boro.	1,250	1,029	880	(221)	-17.7%	(149)	-14%
Laurel Springs Boro.	2,249	1,970	1,710	(279)	-12.4%	(260)	-13%
Lawnside Boro.	3,042	2,692	2,260	(350)	-11.5%	(432)	-16%
Lindenwold Boro.	18,196	17,414	17,250	(782)	-4.3%	(164)	-1%
Magnolia Boro.	4,881	4,409	3,940	(472)	-9.7%	(469)	-11%
Oaklyn Boro.	4,223	4,188	3,600	(35)	-0.8%	(588)	-14%
Pennsauken Twp.	33,775	35,737	30,880	1,962	5.8%	(4,857)	-14%
Somerdale Boro.	5,900	5,192	4,710	(708)	-12.0%	(482)	-9%
Stratford Boro.	8,005	7,271	6,420	(734)	-9.2%	(851)	-12%
Voorhees Twp.	12,919	28,126	35,620	15,207	117.7%	7,494	27%
Woodlynne Boro.	2,578	2,796	2,450	218	8.5%	(346)	-12%
CORRIDOR TOTAL	**336,973**	**341,567**	**319,620**	**4,594**	**1.4%**	**(21,947)**	**-6.4%**
CAMDEN COUNTY TOTAL	**471,650**	**508,932**	**513,530**	**37,282**	**7.9%**	**4,598**	**0.9%**

EMPLOYMENT

Year 2000 employment data is not available at this time. The 1990 Bureau of the Census employment figures show the greatest number of jobs in the four largest and most populated municipalities: Cherry Hill Township (50,709), Camden City (42,017), Pennsauken Township (29,529), and Voorhees Township (14,925). These figures are not consistent with the remaining 18 municipalities in the study area whose combined employment is 48,752 jobs and range

between 6,380 in Haddonfield Borough to 168 in Hi-Nella Borough. The DVRPC employment forecast for the study area municipalities projects a net gain of 12,758 new jobs by the year 2025**.** Sixteen of the study area municipalities will experience a gain or loss of less than 2,000 jobs by 2025, indicating little flux in employment along the corridor. Tavistock Borough was also excluded from the employment data analysis because it's small size would skew the corridor average. Table 2 shows 1990 employment figures and 2025 projected employment in each municipality.

LAND USE

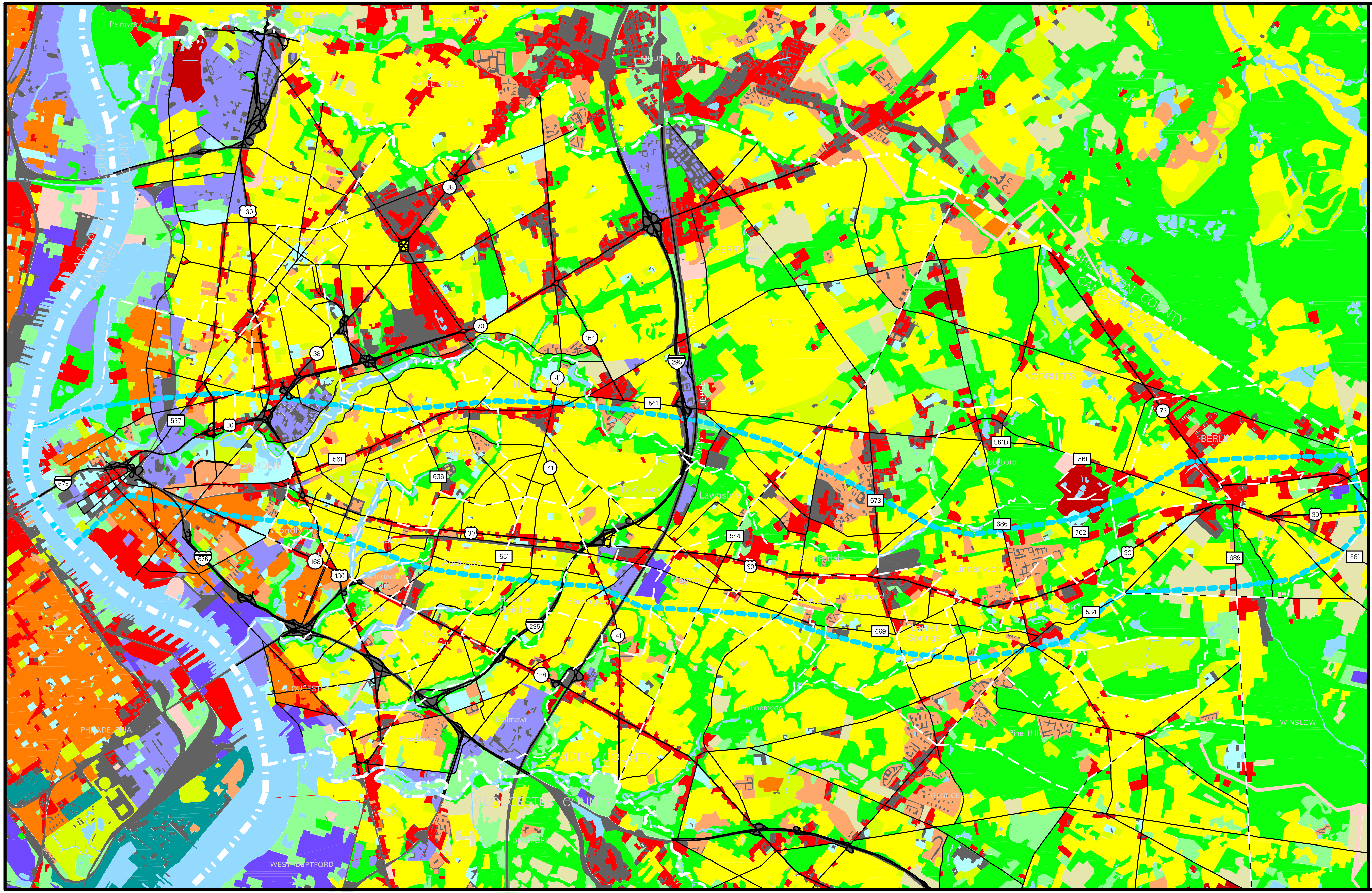
In examining the land use of the corridor it is helpful to distinguish between the smaller municipalities located either along or in close proximity to US 30, and those larger municipalities of which only a marginal portion falls within the study area (Cherry Hill Township, Pennsauken Township, Voorhees Township, and Camden City). The total land area of the 23 municipalities comprising the study area is approximately 90 square miles. Cherry Hill, Pennsauken and Voorhees Townships, and Camden City account for 58.4 square miles of that total. The remaining 18 municipalities range in size from 0.2 (Woodlynne Borough) to 3.9 (Lindenwold Borough) square miles with an average land area of 1.8 square miles. These municipalities exhibit similar land use characteristics. These statistics also do not include Tavistock Borough in order not to skew the corridor average statistics.

Land use is fairly consistent throughout the corridor. US 30 serves as the main street for several municipalities including Oaklyn, Magnolia, Somerdale and Berlin boroughs. Most of these boroughs developed around US 30. As a result, retail establishments can be found located side- by-side along the roadway. In addition, residences that once flanked US 30 have almost completely been replaced by retail or commercial uses. According to DVRPC's 1995 land use analysis, commercial uses and community services combined account for 10.6% of the corridor municipalities' total land area.

Map 3 shows land use in the corridor. Single family detached residential is, by far, the most predominant land use in the study area municipalities, occupying 32% of the total land area. It also accounts for over 41% of the land area in more than half of the corridor municipalities. Single family attached and multi-family units combined account for 6% of the total land area and are most concentrated in Camden City. Vacant land accounts for 3.5% of the study area municipalities. Excluding Cherry Hill, Pennsauken and Voorhees Townships, and Camden City, vacant land in the remaining boroughs and townships accounts for only 0.4% of the total land area. This lack of available land for development coincides with the negative population growth of the US 30 corridor. Future growth in the corridor will take the form of redevelopment of existing parcels and uses.

TABLE 2: 1990 EMPLOYMENT WITHIN MINOR CIVIL DIVISION AND 2025 FORECAST

Municipality	1990 Census	2025 Forecast	Absolute Change '90-'25	% Change '90-'25
Audubon Boro.	2,317	1,970	(347)	-15.0%
Barrington Boro.	1,786	1,660	(126)	-7.1%
Berlin Boro.	5,799	6,600	801	13.8%
Berlin Twp.	3,181	8,820	5,639	177.3%
Camden City	42,017	33,370	(8,647)	-20.6%
Cherry Hill Twp.	50,709	48,690	(2,019)	-4.0%
Clementon Boro.	2,467	3,730	1,263	51.2%
Collingswood Boro.	5,097	4,790	(307)	-6.0%
Haddon Heights Boro.	2,652	4,130	1,478	55.7%
Haddon Twp.	4,978	4,230	(748)	-15.0%
Haddonfield Boro.	6,380	9,120	2,740	42.9%
Hi-Nella Boro.	168	250	82	48.8%
Laurel Springs Boro.	751	810	59	7.9%
Lawnside Boro.	2,036	3,880	1,844	90.6%
Lindenwold Boro.	2,802	3,330	528	18.8%
Magnolia Boro.	886	910	24	2.7%
Oaklyn Boro.	1,290	1,110	(180)	-14.0%
Pennsauken Twp.	29,529	22,230	(7,299)	-24.7%
Somerdale Boro.	2,274	1,920	(354)	-15.6%
Stratford Boro.	3,518	3,280	(238)	-6.8%
Voorhees Twp.	14,925	33,410	18,485	123.9%
Woodlynne Boro.	370	450	80	21.6%
CORRIDOR TOTAL	**185,932**	**198,690**	**12,758**	**6.9%**
CAMDEN COUNTY TOTAL	**227,933**	**264,160**	**36,227**	**15.89%**



US 30 Corridor Study

Map 3

1995 Land Use

- SINGLE FAMILY (detached)
- MULTI-FAMILY
- ROW HOMES
- MOBILE HOMES
- MANUFACTURING
- HEAVY MANUFACTURING
- TRANSPORTATION
- UTILITIES
- COMMERCIAL / SERVICES
- COMMUNITY SERVICES
- MILITARY
- RECREATION
- AGRICULTURE
- VACANT
- WOODED
- WATER

0 1 2

MILES

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
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TRAFFIC VOLUMES

Map 4 features the available traffic volume data for the study area. Only traffic counts between 1997 and 2001 are shown. These counts, from DVRPC and New Jersey DOT, reflect the most recent available five year span. US 30 serves different needs in different parts of the study area. In the west, known as Admiral Wilson Boulevard, it carries traffic to and from the Ben Franklin Bridge via a three to four lane-by-direction controlled access highway. An AADT (Average Annual Daily Traffic) volume of 82,097, the highest traffic volume location along US 30 in the study area, was recorded in 1999 in the vicinity of Federal Street (CR 537) and Baird Boulevard (CR 608). This location is west of the Airport Circle (NJ 38, US 130 and US 30) and east of I-676. A volume of 56,554 vehicles was recorded in 1999 to the west of I-676.

Moving eastward, the volume of traffic on US 30 changes in relationship to both it's lane configuration and the significance and volume of intersecting streets. From the Collingswood Circle east to I-295, US 30 drops from two to one lane-by-direction. An AADT volume of 15,684 was recorded in 2001 just west of Cuthbert Boulevard (CR 636), a one lane-by-direction principal arterial. Cuthbert Boulevard meets US 30 at a T-intersection and serves north-south movements to and from CR 561, NJ 70 and NJ 38. In 2000, an AADT volume of 22,796 was recorded on Cuthbert Boulevard between CR 561 and NJ 70.

The vicinity of I-295 interchange #29 is the second highest traffic volume location on US 30. Between Station Avenue (CR 656) and I-295, AADT volume has been between 27,000 and 30,000 in the last four years. On the east side of I-295, an AADT volume of 32,436 was recorded in 2001. US 30 widens to two lanes-by-direction from the I-295 interchange east to Berlin-Cross Keys Road (CR 689). I-295 is a limited access highway connecting South Jersey with the Trenton area. Interstate 295 had an AADT volume of 123,511 in 1998. This count was taken north of US 30. Volumes on US 30 remain in the mid-twenty thousand to low-thirty thousand range through the mid-section of the study area. East of Gibbsboro Road (CR 686), volumes on US 30 begin to drop below 20,000 vehicles. An AADT volume of 15,991 vehicles was recorded in 2000 just west of the intersection of US 30 and Franklin Avenue (CR 692). An AADT volume of 15,631 was recorded on US 30 just west of NJ 73.

Concerning north-south routes in the study area, an AADT volume of 36,260 was recorded on Laurel Road (CR 673) in Stratford Borough in 1997. Laurel Road, classified as a principal arterial, is an important through route to the Lindenwold PATCO/NJ Transit station for residents of southern Camden County and northern Gloucester County. NJ 73 is a principal arterial carrying local and through traffic between the Tacony-Palmyra Bridge and the Atlantic City Expressway. An AADT volume of 21,940 was recorded in 1997 on NJ 73 just north of the study limits.

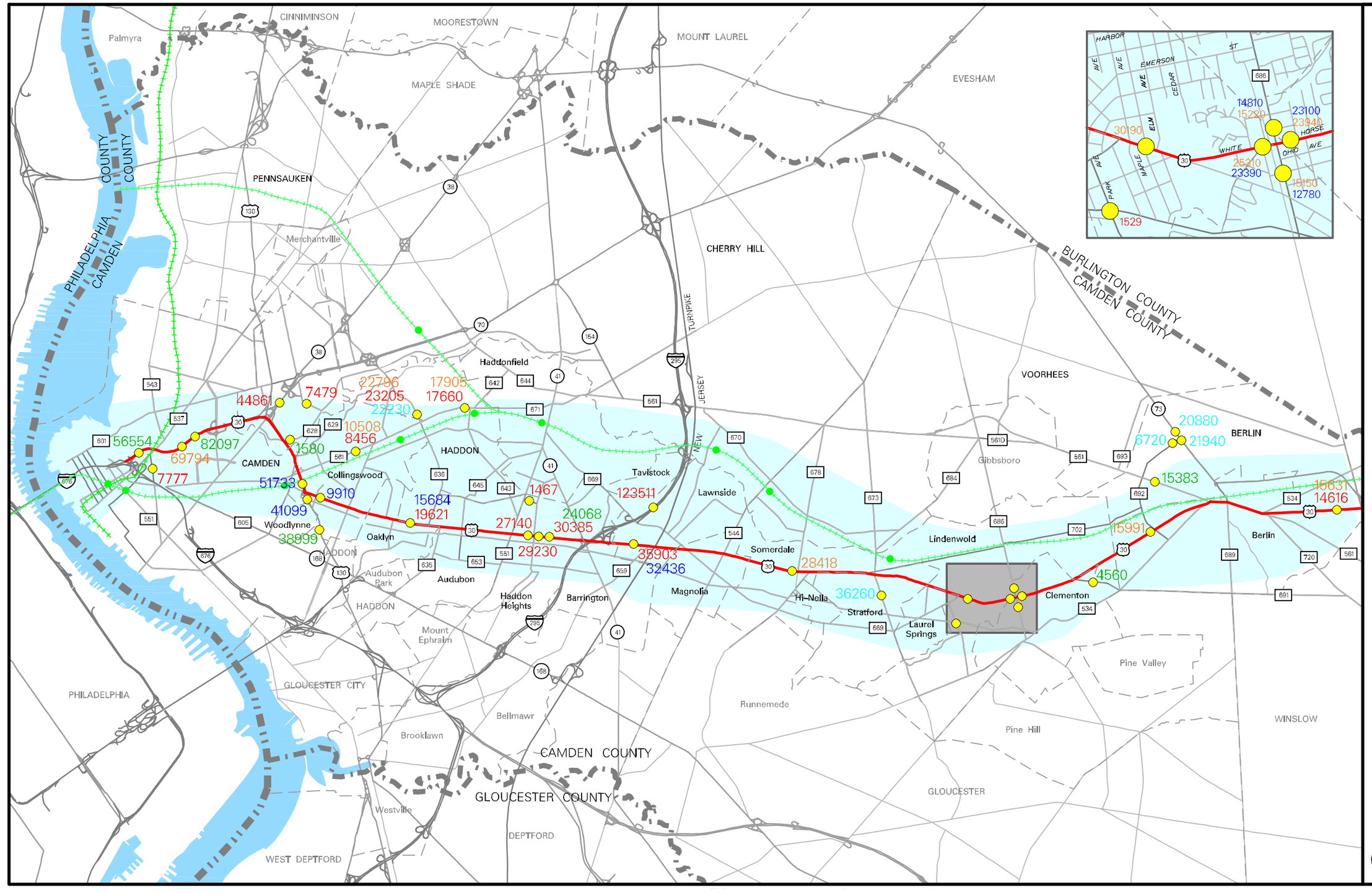
ACCIDENT DATA

DVRPC has incorporated accident data provided by the New Jersey DOT into a Geographic Information System (GIS) environment for analysis. During the municipal field visits for the US 30 Corridor Study, DVRPC staff was informed of several high accident locations throughout the corridor. In general, accidents relating to left turns, same direction-rear end, angle, and sideswipe, were described as occurring frequently along US 30, especially in the municipalities to the east of I-295. Through our analysis of NJDOT's accident data we were able to identify trends which support the information provided by the municipal representatives. A summary of the accident information is presented in Table 3. This table also includes a comparison of the accident statistics of the US 30 corridor to the combined accident total of the four New Jersey counties of DVRPC's region: Burlington, Camden, Gloucester and Mercer counties. High accident locations were also analyzed and are presented in Table 4 and displayed graphically on Map 5. Accident data was analyzed for the years 1998 through 2000. Because of the size of the data set, only accidents occurring on US 30 between mileposts 0.96 and 18.33 (the study limits) were considered. The following observations were drawn from the accident data compilation.

Accident Summary

During the three year period between 1998 and 2000, there were 2,501 accidents at 588 locations on US 30 within the study area. Of the total, there were 8 fatalities, 993 injuries, and 1,500 accidents that only involved property damage. There were 1,049 same direction-rear end accidents, accounting for 41.9% of the total, making it the most predominant collision type. This percentage is significantly higher than the DVRPC four-county New Jersey region percentage of 27.4%. Other significant accident type percentages include angle (16.4%), left turn (13.8%), and sideswipe (10.8%). Left turn accidents were also significantly higher than the DVRPC New Jersey region percentage of 5.3%. Accidents occurring at intersections accounted for 62.1% (1,553) of the total with 37.9% (948) occurring mid-block.

There are basically three types of lane configurations for US 30 within the study area: the Admiral Wilson Boulevard and US 30/US 130 co-designated section, which is a three to four lanes-by-direction, controlled access highway; the section between US 130 and I-295, which is one lane-by-direction with left turn lanes at select intersections; and the section east of I-295 which is two lanes-by-direction with left turns generally made from the passing lane. In examining the accident data there is a clear difference in both the number of accident locations and the total number of accidents occurring within the different lane configurations. The major dividing line between the one lane and two lanes-by-direction configurations is I-295. In reviewing information gathered from field visits and accident data analysis, it became apparent that the accident situation was very different on either side of I-295. Of the 2,501 accidents in the study area, 1,758 occurred on the east side of I-295 and 743 occurred on the west side. Concerning the 588 accident locations, 374 are on the east of I-295 and 214 are on the west side. This data is even more emphatic considering traffic volumes tend to be lower on US 30 on the east side of I-295 compared to the west side of I-295. Within the study area, US 30 runs approximately seven miles on the west side of I-295 and ten miles on the east side of I-295.



US 30 Corridor Study

Map 4

Traffic Volumes

Average Annual Daily Traffic (AADT)

Traffic Count Location

15254	1997 Traffic Count
15254	1998 Traffic Count
15254	1999 Traffic Count
15254	2000 Traffic Count
15254	2001 Traffic Count

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MILES

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Field observations revealed that average speeds tended to be higher along US 30 in the two lane-by-direction section compared to the one lane-by-direction section. It was also common during field views to see cars in the inside lane of the two lane-by-direction section weaving into the outside lane to avoid left turning vehicles. This behavior can create a potential accident situation. The accident data presented here, particularly the frequency, location, and predominant collision type supports these observations. In the one lane-by-direction portion of US 30, there is generally either a dedicated left turn lane at an intersection or there is sufficient room to pass a vehicle waiting to turn left by using the shoulder.

Municipal representatives indicated that roadway flooding was another contributor to accidents. Generally speaking the potential for an accident is greater during inclement weather. Along US 30, specifically east of I-295, motorists have been observed changing lanes abruptly to avoid areas of pooling water. This behavior increases the chances for a conflict. The percentage of accidents occurring during wet conditions was 32.4% (811 accidents), higher than the four county percentage of 21.7%.

Accident Frequency

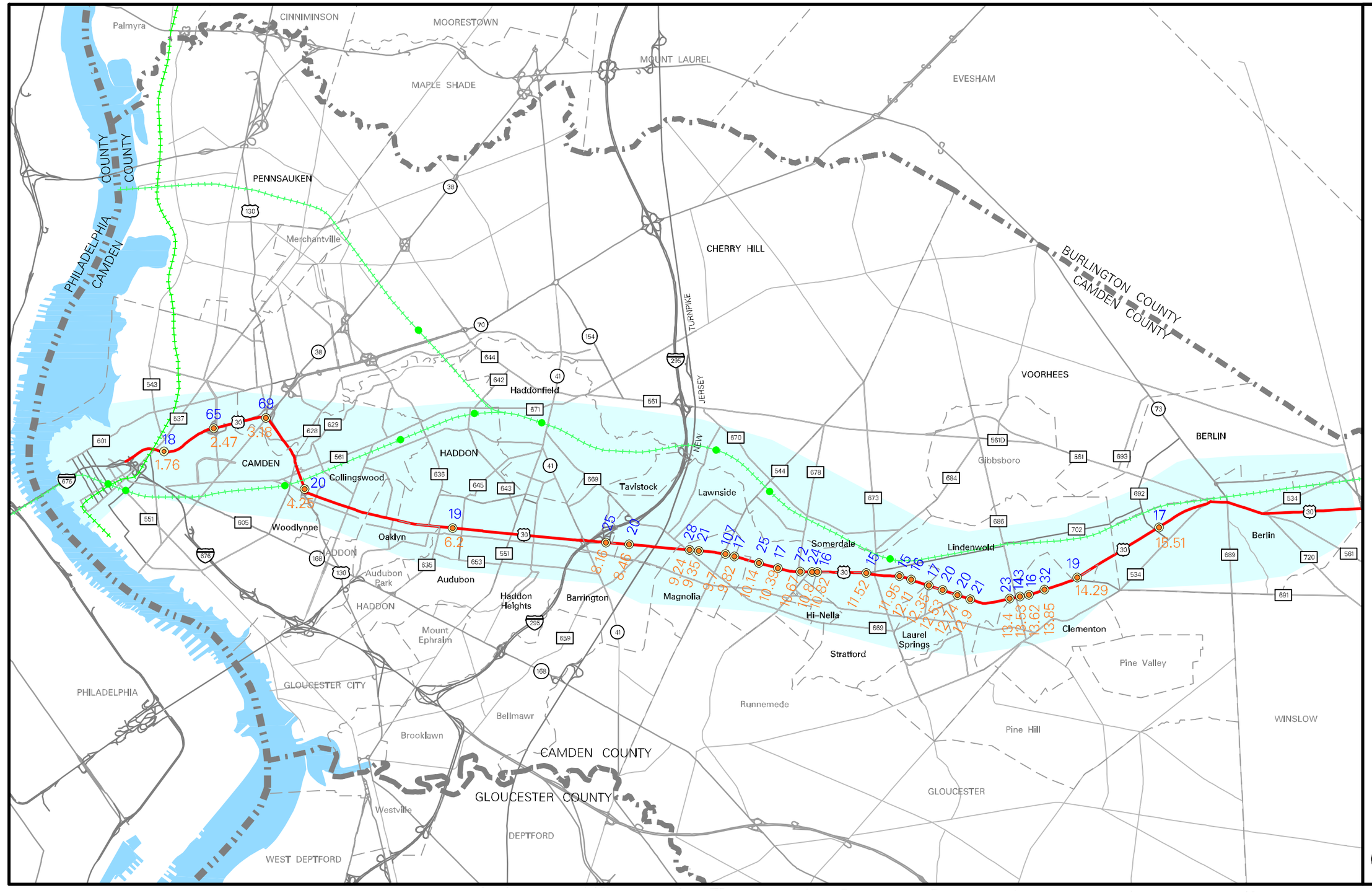
There were 2,501 accidents at 588 locations on US 30 within the corridor study area. In an effort to create a more manageable and meaningful data set, a threshold was determined for accident locations. As a result, a subset of data was created which included only those locations where 15 or more accidents occurred over a three year period. This threshold produced 29 "hot spot" locations which combined account for 937 accidents, or 37.4% of the total accidents within the corridor. This figure accounts for the top 5% of accident locations. Further analysis of this subset revealed that the predominant collision types were: same direction-rear end (200), and left turn (166). Five hot spots had 50 or more accidents, and two locations had over 100.

The two highest accident locations in the study area were located on the east side of I-295. Left turn was the predominant collision type at both. At the intersection of US 30 and Gibbsboro Road (CR 686) in Clementon Borough 143 accidents occurred, of which 70 were left turn collision type. The intersection of US 30 and Evesham Road (CR 544) in Magnolia Borough was the site of 107 crashes, 40 of which were left turn collision type. Both of these intersections were identified by municipal representatives during initial field visits as high accident locations. Combined, the two produced a total of 150 injuries and two fatalities. New Jersey DOT has developed plans to improve these two intersections.

TABLE 3: US 30 (M.P. 0.96-18.33) ACCIDENT SUMMARY, 1998 - 2000			
ACCIDENT TYPE	**# of Accidents**	**% of Total**	**DVRPC NJ Region Accident %**
Same Direction - Rear End	1,049	41.9%	27.4%
Angle	410	16.4%	19.9%
Left Turn	346	13.8%	5.3%
Same Direction - Sideswipe	271	10.8%	8.0%
Head On	48	1.9%	1.9%
Overturned	4	0.2%	0.1%
Pedestrian	19	0.8%	0.7%
Fixed Object	107	4.3%	4.3%
Animal	2	0.1%	0.8%
Parked Vehicle	14	0.6%	10.8%
Pedalcycle	9	0.4%	0.4%
Other	222	8.9%	20.4%
TOTALS	2,501	100.0%	-----
INJURY CATEGORY	**# of Accidents**	**% of Total**	**DVRPC NJ Region Accident %**
Property Damage Only	1,500	60.0%	73.1%
Injury	993	39.7%	26.5%
Fatality	8	0.3%	0.4%
TOTALS	2,501	100.0%	-----
LIGHTING CONDITION	**# of Accidents**	**% of Total**	**DVRPC NJ Region Accident %**
Daylight	1,744	69.7%	68.0%
Night/Dawn/Dusk	757	30.3%	32.0%
TOTALS	2,501	100.0%	-----
INTERSECTION	**# of Accidents**	**% of Total**	**DVRPC NJ Region Accident %**
At Intersection	1,553	62.1%	68.9%
Between Intersection	948	37.9%	31.1%
TOTALS	2,501	100.0%	-----
SURFACE CONDITION	**# of Accidents**	**% of Total**	**DVRPC NJ Region Accident %**
Dry	1,620	64.8%	72.7%
Wet	811	32.4%	21.7%
Snow or Ice	37	1.5%	3.3%
Unknown	33	1.3%	2.3%
TOTALS	2,501	100.0%	-----

TABLE 4: US 30 (M.P. 0.96 - 18.33) HIGH ACCIDENT LOCATIONS (15 OR GREATER), 1998-2000

Mile Post	Cross Street	Pedalcycle Accidents	Pedestrian Accidents	Total Injured	Total Killed	Total Accidents	Predominant Collision Type
1.76	Flanders Blvd.			6	0	18	Same Direction-Rear End (6)
2.47	Baird Blvd. (CR 608)	2	1	50	2	65	Same Direction-Rear End (33)
3.18	US 130/Airport Cir.			22	0	69	Other (34)
4.25	US 130/Collingswood Cir.			8	0	20	Same Direction-Rear End (8)
6.2	Merchant St.			8	0	19	Same Direction-Rear End (9)
8.16	Copley Rd. (CR 666)			5	0	25	Same Direction-Rear End (13)
8.46	Mouldy Rd.			10	0	20	Same Direction-Rear End (12)
9.24	Warwick Rd. (CR 669)		1	18	0	28	Same Direction-Rear End (14)
9.35	Ashland Ave.			22	0	21	Same Direction-Rear End (8)
9.7	Evesham Ave.(CR 544)			65	0	107	Left Turn (40)
9.82	Monroe Ave.			14	0	17	Same Direction-Rear End (12)
10.14	Evergreen Ave.		1	27	0	25	Angle (10)
10.39	Crestwood Ave.			16	2	17	Angle (9)
10.67	Somerdale Rd.	1		46	0	72	Left Turn (23)
10.8	Ogg Ave. (CR 677)			19	0	24	Same Direction-Rear End (12)
10.82	Hartner Ave.			7	0	16	Same Direction-Rear End (6)
11.52	Harvard Ave.		1	11	0	15	Angle (8)
11.95	New Rd.			9	0	15	Same Direction-Rear End (7)
12.11	Hunt Ave.			17	0	16	Same Direction-Rear End (8)
12.35	Broadway (CR 697)			16	0	17	Left Turn (7)
12.53	Hemlock Ave.		1	11	0	20	Same Direction-Rear End (8)
12.74	Stone Rd. (CR 669)			9	0	20	Same Direction-Rear End (11)
12.9	Linden Ave. (CR 700)			12	0	21	Same Direction-Rear End (14)
13.4	Oak Ave.			16	0	23	Angle (8)
13.53	Gibbsboro Rd. (CR 686)			85	2	143	Left Turn (70)
13.62	Franklin Ave.			7	0	16	Same Direction-Rear End (8)
13.85	Trout Ave.			31	0	32	Left Turn (18)
14.29	New Freedom Rd.(CR 691)		1	16	0	19	Same Direction-Rear End (11)
15.51	Franklin Ave. (CR 692)	1		23	0	17	Left Turn (8)
TOTALS		**4**	**6**	**606**	**6**	**937**	**Same Direction-Rear End = 200** **Left Turn = 166** **Angle = 35** **Other = 34**



US 30 Corridor Study

Map 5

High Accident (≥15) Locations 1998 – 2000

- Accident location
- 28 — Total number of accidents
- 9.24 — Milepost
- US 30
- Rail Station

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MILES

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
July 2002

TRANSIT SERVICE

The study corridor provides extensive bus and rail service. All bus lines described and listed here originate from the Walter Rand Transportation Center in Camden and cross through, penetrate or run along the US 30 corridor with extended service throughout the three southern New Jersey counties of Burlington, Camden and Gloucester. The Port Authority Transit Corporation (PATCO) High Speed Line provides service between Philadelphia and Lindenwold within the study corridor and has connections to a number of bus lines at seven of its nine stops in the US 30 corridor. New Jersey Transit's Atlantic City Rail Line (ACL) penetrates the corridor shortly before Haddonfield and connects with PATCO trains at the Lindenwold station as well as several bus lines at both stations. Two additional stations in Cherry Hill and Atco lie just outside the study area. Thirty bus lines operate in the corridor, ten of which directly serve US 30 corridor residents and the remaining twenty bus lines either briefly penetrate or cross through the corridor at the Walter Rand Transportation Center in Camden to continue either north or southbound out of the study area. The rail lines and the ten bus lines directly serving the corridor are described in more detail below. The remaining twenty bus lines are listed without detailed descriptions. Map 6 shows the transit routes within the study area

Rail Lines

~~PATCO~~ - Philadelphia to Lindenwold - The High Speed line operates daily within the US 30 corridor between Philadelphia and Lindenwold including stops at City Hall Camden, Broadway - Walter Rand Transportation Center, Ferry Avenue, Collingswood, Westmont, Haddonfield, Woodcrest, Ashland and Lindenwold. PATCO carries approximately 38,000 passengers a day and provides parking at the seven easternmost stations for 12,636 vehicles. The headways during morning hours (4 A.M. - 6 A.M.) are every 30 minutes. Weekdays during the A.M. peak (6 A.M. - 9 A.M.) trains run every 3 - 12 minutes. During midday (9 A.M. - 4 P.M.) weekdays, and weekends (6 A.M. - 11 P.M.), trains arrive or depart every 20 minutes. The P.M. peak headways (4 P.M. - 7 P.M.) change to every 4 - 20 minutes only for weekdays and switch back to every 20 minutes in the evening hours (7 P.M. - 11 P.M.). Nighttime (11 P.M. - 4 A.M.) headways are 40 minutes during weekdays and weekends. The PATCO line interchanges with the ACL at the Lindenwold Station. Several NJ Transit bus lines also interchange with the PATCO High Speed Line. Routes 403, 454, 459 and 554 connect at the Lindenwold Station. The Routes 451, 454, 455 and 457 at the Haddonfield Station, Route 450 at the Westmont Station, and Routes 403, 451 and 453 pass by the Ferry Avenue station. The Broadway and City Hall stations have virtually every NJ Transit southern New Jersey bus line, that originates in or passes through Camden City, in close proximity. A shuttle bus service is provided between the Echelon Mall Business Complex and the Ashland station. Buses depart every 20 minutes as follows: Monday through Friday from 7 A.M. to 12 P.M. and 3 P.M. to 8 P.M. and Saturdays from 9 A.M. to 8 P.M. No service is provided on Sundays.

All seven PATCO parking lots are currently at or near capacity. Year 2025 projections estimate an additional 1,495 parking spaces will be needed to handle the anticipated

demand. These projections, utilizing an extended catchment area travel simulation model that includes growing communities to the south and east of the study corridor, were performed as part of the PATCO parking needs assessment study currently underway. The Lindenwold station, with an estimated demand for an additional 763 spaces, accounts for more than half of the total increase. The anticipated 1,495 additional vehicles, most traveling during the peak periods, will have a definitive impact on the corridor's road network, particularly those routes which directly serve PATCO stations.

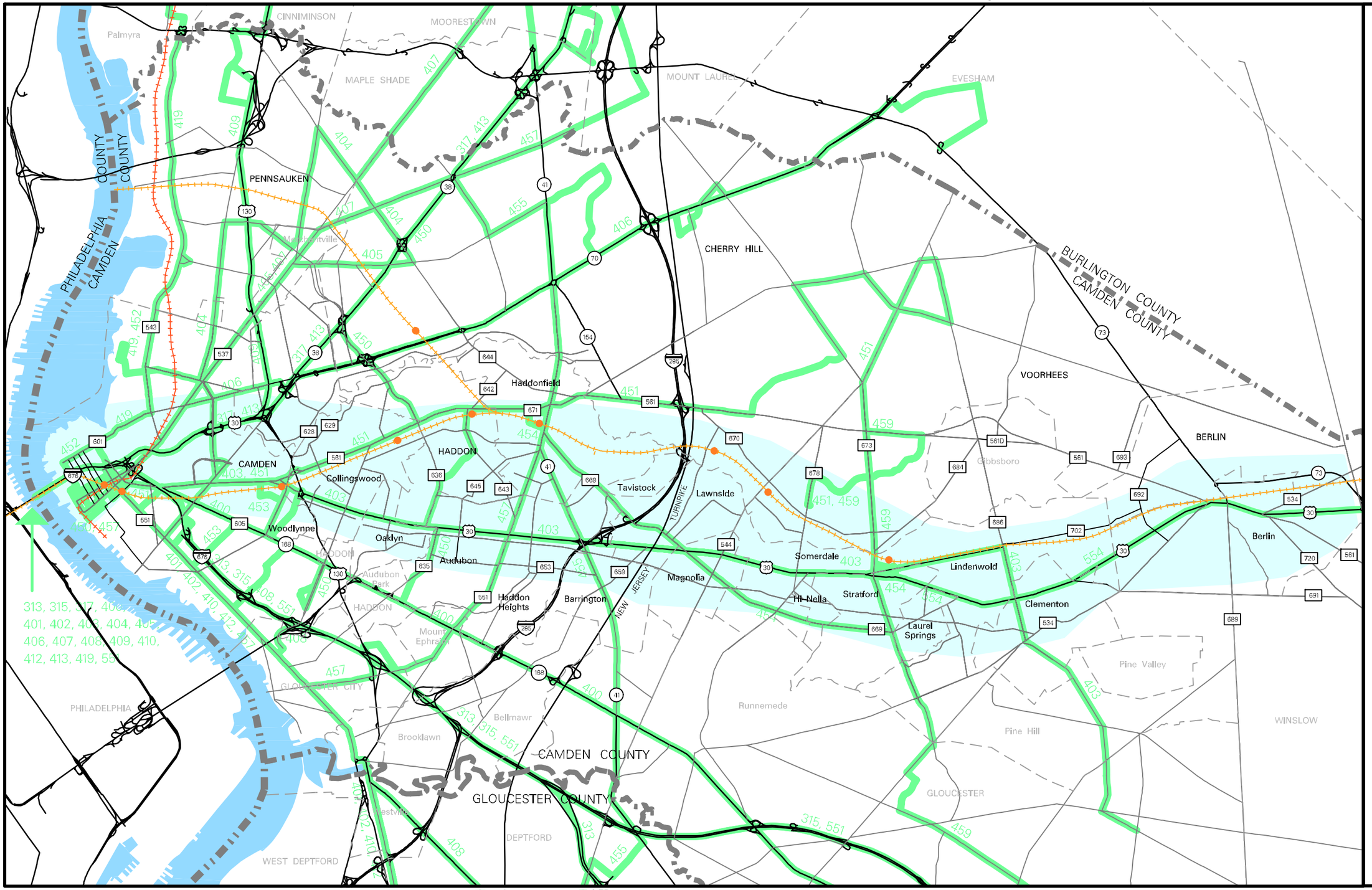
ACL - Philadelphia to Atlantic City - Provides daily train service from 5:44 A.M. to 12:50 A.M. between Philadelphia's 30th Street Station and Atlantic City with a stop at Lindenwold within the study area. Headways are generally on a 90 minute interval, except for one 52 minute and one 49 minute headway once during the morning and once during the late afternoon commute respectively.

SNJLRTS - Trenton to Camden City (under construction) - The Southern New Jersey Light Rail Transit System (SNJLRTS) is currently under construction. Expected opening date is Spring of 2003. This 34 mile light rail line will operate between Camden and Trenton serving twenty stations along the Delaware River and US 130. Five stations will be within the study area, however, parking for 375 vehicles will only be provided at one station.

Bus Routes

Route 403 - Philadelphia to Turnersville - Daily service with connections to the PATCO Lindenwold and Ferry Avenue stations. Weekday peak headways are between 15 and 30 minutes and off-peak is 60 minutes. Saturday headways are 30 to 50 minutes all day and Sunday headways are 55 to 65 minutes all day. The majority of the route is within the study corridor and serves Philadelphia, Camden, Collingswood, Audubon, Barrington, the Echelon Mall, Lindenwold PATCO/NJ Transit station , Clementon, Pine Hill, Winslow Plaza, Camden County College, Erial and Turnersville. The bus route operates primarily along US 30.

Route 450 - Camden to Cherry Hill Mall via Audubon - Daily service with weekday headways of 30 to 45 minutes during peak hours and 60 minutes during off-peak hours. Weekend service is provided approximately every 75 minutes. This route basically crosses the study corridor in an east-west direction, unlike Route 403 described above, which runs along or mainly parallel to Route 30. It serves Camden (Walter Rand Transportation Center), Fairview, Audubon, Westmont, Cherry Hill and the Cherry Hill Mall. Within the study area, Route 450 intersects with Route 403 at US 30, with Route 451 at CR 561, and with PATCO at the Westmont Station.



US 30 Corridor Study

Map 6

Public Transit Service

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
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Route 451 - Camden to Echelon Mall - This weekday-only service route operates on CR 561 with approximately 60 minute headways and remains within the study corridor just past Haddonfield, where it then exits the corridor until it reenters at the Echelon Mall via Somerdale Road. Along the route it serves Camden, Westmont, Haddonfield, Woodcrest, Cherry Hill, Vorhees and the Echelon Mall.

Route 452 - Camden to Pennsauken via NJ State Aquarium - With headways of 30 minutes during weekdays and 60 minutes during weekends, this line serves Cramer Hill with multiple stops within Camden and Pennsauken. Crossing through the corridor in a north-south direction, this bus line intersects with routes 317, 318, 400, 403,406, 407, 409, 413, 419, and 451 within the boundaries of the study area. Total trip length is 52 minutes.

Route 453 - Camden to Ferry Avenue PATCO - This route runs on 30 minute morning peak hour headways and 60 minute headways for the rest of the day on weekdays, and 60 minute headways all day on Saturdays. The total duration of the trip is 24 minutes. From the Walter Rand Transportation Center in Camden, the bus line leaves the study corridor via Broadway and later reenters to connect with the PATCO Ferry Avenue station and Route 403 at US 30.

Route 454 - Haddonfield PATCO to Lindenwold PATCO/NJ Transit - Service is provided on weekdays with only two runs during the A.M. hours and three runs during the P.M. hours between Lindenwold and Haddonfield. Six runs on hourly headways, three runs during the A.M, and three runs during the P.M. periods, are provided on weekends. This line serves the Haddonfield PATCO station, Magnolia, Somerdale, Stratford, and the Lindenwold PATCO/NJ Transit station. Total duration of a one-way trip is 23 minutes. This bus line interchanges with Route 403 at Laurel Road and US 30, and again at Warwick Road and US 30. It also connects with Route 459, PATCO and the ACL at Lindenwold station.

Route 455 - Cherry Hill Mall to Paulsboro via Woodbury - Daily service is provided on this route although Sunday service is limited between Deptford and Paulsboro with 90 minute headways. Weekday headways range from 45 to 60 minutes and Saturday headways between 30 and 60 minutes. This line serves Cherry Hill, Haddonfield PATCO, Barrington, Runnemede, Deptford, Woodbury, National Park, Thorofare, and Paulsboro. Within the study corridor, Route 455 intersects with Route 403 at US 30 and NJ 41, as well as with Routes 454, 457 and PATCO at the Haddonfield Station. A one-way trip takes approximately 1 hour and 20 minutes.

Route 457 - Camden to Moorestown Mall - This bus line crosses through the corridor via Kings Highway (CR 551 and NJ 41). Weekday peak hour headways are 30 minutes and off- peak headways are 60 minutes. Saturday service runs hourly and does not serve East Gate Industrial Park at East Gate Drive and Pleasentville Avenue. There is no Sunday

service. Other stops along the route are Camden, Gloucester City, Mt. Ephraim, Audubon, Haddonfield PATCO, Cherry Hill, Mount Laurel, East Gate Industrial Park (only during morning hours from Camden to Moorestown and during afternoon hours in the opposite direction), and the Moorestown Mall. Within the study corridor this bus line connects with Route 403 at US 30 and CR 551, and with Route 454, 455 and PATCO at the Haddonfield PATCO station.

Route 459 - Echelon Mall to Avandale Park and Ride via Camden County Community College- Service is provided on weekdays and Saturdays with 35 to 70 minute and 120 minute headways respectively. The Winslow Plaza and Technical Institute of Camden County stops are not included in the Saturday schedule. Stops within the study corridor are the Echelon Mall, and the Lindenwold PATCO/NJ Transit station. Route 459 intersects with Route 454 at Laurel Road and Warwick Road, and with Route 403 at US 30, with PATCO and the ACL at the Lindenwold Station, and with Route 451 at the Echelon Mall. The bus travels along Laurel Road to Glendale Avenue, to the Echelon Mall and back within the perimeter of the study corridor.

Route 554 - Lindenwold to Atlantic City - Daily service, with the same 30 minute peak and 60 minute off-peak headways for weekdays and weekends. This bus operates exclusively along US 30 serving the Lindenwold PATCO/NJ Transit station and Berlin within the study corridor and continuing from there all the way to Atlantic City.

Following are additional bus lines operating via the Walter Rand Transportation Center in Camden, which is located within the study corridor. However, their service has no direct impact on the US 30 corridor since all these routes leave the study area after departing the Transportation Center.

From Camden - North and East via US 130, CR 537, NJ 70 and NJ 38 - Routes 317, 318, 404, 405, 406, 407, 409, 413, 419.
From Camden - South via NJ 168, NJ 45 and I-76 - Routes 313, 315, 316, 400, 401, 402, 408, 410, 412, 551, and 555.

BICYCLE FACILITIES

As of April 2000, all New Jersey Transit bus lines serving southern New Jersey accommodate bicycles. Most buses can carry up to two bicycles on a front-mounted rack. Some lines occasionally utilize cruiser-type buses with baggage compartments. Up to four bikes total may be carried in their storage area underneath the bus. The right side compartments of the bus, when traveling to or from stops along streets and highways are always permitted for loading and unloading at any stop. The left side storage can only be accessed at bus terminals for safety reasons. However, bicycles loaded on the left side can still be unloaded from the right side at a regular street stop.

Bicycle accommodations on buses effectively expands the area served by transit. The typical outer limit for a pedestrian trip to or from a transit stop is approximately one-quarter mile. A pedestrian can cover this distance in approximately five minutes. In the same amount of time, however, an average bicyclist can travel approximately one mile. Buses which accommodate bikes allow transit patrons to use their bikes at both trip ends. As NJ Transit's "Rack 'n' Roll" service continues to expand during the coming years, it will bring an increase in bicycle traffic on corridor roadways.

There are also several bike trails in the study area. They include Cooper River Park Bike Trail, the Haddon Lake Park Bike Trail, Newton Lake Park Bike Trail, Lindenwold Trail, Gibbsboro Trail and Berlin Park Bike Trail. Many of these trails are primarily recreational trails, however, several can be used for commuting or general travel purposes. Another significant addition to the trail system is currently in the planning phase. The East Atlantic Bikeway will be a paved nine mile multi-use trail, constructed by Camden County and running from Oaklyn to Clementon. The trail will be constructed along an existing right-of-way between CR 727 and an active freight rail line.

ITS COMPONENTS

New Jersey DOT has developed an ITS (Intelligent Transportation System) Strategic Business Plan to meet future transportation challenges facing the state through the deployment of ITS components. ITS is the application of advanced technologies (computers, communications, electronics, sensors) in an integrated manner for the operation of transportation systems at their optimal safety and efficiency. This plan focuses the ITS efforts into a strategic corridor planning program that will best maximize the benefits of ITS and limited available funding.

New Jersey DOT has identified the South Jersey Urban Commuting Corridor as a priority corridor for ITS investment. This corridor addresses the needs of commuting within the counties of Burlington, Camden and Gloucester. These counties provide the commuter shed to the Philadelphia/Camden area which experiences significant daily congestion. The corridor's commuting pattern is spread out in a radial pattern with demand centered toward the urban core. Limited access routes such as I-76, I-295, I-676, NJ 42, NJ 55, NJ 90 and the NJ Turnpike as well as urban arterials such as US 30, US 130, NJ 38, NJ 70 and NJ 73 provide both a daily incident management challenge and opportunity to manage demand. Given the nature of the transportation system demands and opportunities for management, this corridor can be well served by strategic investments in ITS projects.

A significant investment in ITS technologies has already taken place and is programmed to continue within the South Jersey Urban Commuting Corridor. The installation of closed circuit TV (CCTV) cameras, variable message signs (VMS) and highway advisory radio (HAR) throughout the corridor along with the Emergency Service Patrols (ESP) and the Incident Management Response Teams (IMRT) assists NJ DOT staff in the traffic operation center (TOC) in Cherry Hill monitor traffic conditions, assist in incident management and disseminate

information to the public. A closed loop traffic signal system (Traffic Signal Contract 16) is being installed on US 30, NJ 38, NJ 70 and NJ 73 which will allow NJ DOT's staff to operate the traffic signals along the corridor remotely from the TOC. Traffic signals along US 30 will be interconnected through a fiber optic network within the closed loop system. These signalized intersections are part of an Advanced Traffic Management System which includes the connection and integration of 97 signalized intersections, installation of 19 CCTV cameras, 4 HAR transmitters and 13 VMS. The system includes fiber optic installation to allow communication to NJ DOT's TOC. Table 5 identifies the ITS components existing or programmed.

In addition to the components listed in Table 5, the Delaware River Port Authority and its PATCO subsidiary have additional ITS components either being implemented or planned. The Ben Franklin Bridge has the following ITS components: Roadway/Weather Sensors, four Portable Variable Message Sign, ten Lane Use Signals, E-Z Pass, and CCTV Cameras (currently in the design phase). Additionally, the DRPA will have a Traffic Management Center which will serve as the central point for DRPA traffic and incident management activities and police dispatch. PATCO has a control center in addition to CCTV Cameras, Vehicle Detection System, Variable Message Signs, Emergency Call Boxes and Incident Management Response Teams.

TABLE 5: ITS COMPONENTS WITHIN THE US 30 CORRIDOR

Route	Milepost	Location	Municipality	Component
I-295	28.6	Near Devon Avenue	Haddon Heights	CCTV Camera
I-295	30.1	Near US 30	Barrington	CCTV Camera
I-295	31.2	Near Tillman Street	Lawnside	CCTV Camera
I-295	32.0	Near PATCO High Speed Line	Cherry Hill	CCTV Camera
US 30	N.A.	Corridor-wide: Part of 21 Camera System	Corridor-wide	CCTV Camera
US 30	N.A.	Corridor-wide: Part of Traffic Signal Contract 16	Corridor-wide	Vehicle Detection System
US 30	1.9	In the Vicinity of the Cooper River	Camden	Roadway/Weather Sensor
US 30	N.A.	Corridor-wide: Part of Traffic Signal Contract 16	Corridor-wide	Closed Loop Traffic Signal System
I-295	28.6 NB	Near Devon Avenue	Haddon Heights	VMS
I-295	31.2 SB	Near Tillman Street	Lawnside	VMS
US 30	Various	Planned	Various	HAR

ENVIRONMENTAL JUSTICE

An assessment of environmental justice (EJ) impacts applies to agencies receiving federal funds and describes a combination of individual and agency attitudes, sensitivities and responsibilities to ensure that policies, programs, funds and actions do not result in direct or disparate negative impacts on any racial, ethnic or socio-economic group. The US Environmental Protection Agency defines EJ as:

> *"...the fair treatment and meaningful involvement of all people, regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."*

DVRPC's Approach to Environmental Justice

In response to recent federal guidance concerning environmental justice and in furtherance of its on-going public involvement and information activities, DVRPC has developed a report entitled *...and Justice for All*. This document is an assessment to mitigate potential direct and disparate impacts of DVRPC's plans, programs and planning process on defined minority, handicapped and lower income populations in the Delaware Valley region.

This report provides background information about what environmental justice is; summarizes DVRPC's existing EJ-related plans, policies and public involvement activities, and describes a quantitative and qualitative methodology for evaluating the Long-Range Plan, the Transportation Improvement Program (TIP) and other programs. Recommended policies and implementation strategies to enhance DVRPC's EJ responsibilities are proposed, including an annual monitoring and evaluation process to ensure that the policies and implementation strategies remain effective.

The US 30 Corridor Study utilizes the quantitative analysis portion of the report *...and Justice for All*, which relies primarily upon available U.S. Census data. Demographic information was analyzed at the nine-county regional scale (by municipality or census tract), for various indicators of disadvantage: concentrations of minorities (Hispanic and Non-Hispanic), the elderly, the handicapped, as well as car-less and poverty households. The parameters of each indicator are described in the Regional Demographics section below. The number of these factors that apply in a given census tract or municipality represent the Degrees of Disadvantage.

Regional Demographics

Environmental justice is concerned with the impacts of disparate funding and disparate services on defined minority and low-income groups. In addition, DVRPC assesses elderly, disabled and car-less populations who have special travel needs and may adversely be affected by transportation planning decisions. Using U.S. Census data for the year 2000 (depending on data

availability) and 1990, these groups are identified and located by the smallest and best unit of analysis possible, in most cases by census tract (the elderly population was only available by municipality).

The impacted demographic groups are defined as follows.

Minority

The U.S. DOT Order (5610.2) on Environmental Justice defines "Minority" as:

1. Black: a person having origins in any of the black racial groups of Africa.
2. Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
3. American Indian and Alaskan Native: a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.

Data on minority status is derived from the year 2000 Census. The 2000 Census question on race differed from the 1990 Census question by offering respondents the option of selecting one or more racial categories. There are now 57 possible racial categories. Because of this change, 2000 census data on race is not directly comparable with data from the 1990 census. Thus, caution should be used in interpreting changes in racial composition over time. However, the overwhelming majority, 98% of respondents in the U.S. population, reported only one race.

Hispanic

Hispanic ethnic origin, though often included in the minority definition, deserves special mention, since it is not a racial category. Hispanics are defined as persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race. Persons in the 2000 Census were asked, "Is this person Spanish, Hispanic, Latino?" Thus, persons of Hispanic origin can be of any race. (Hispanics should have indicated their origin in the Hispanic origin question, not in the race question, because in federal statistical systems ethnic origin is considered to be a separate concept from race. This interpretation is based on changes made by the Office of Management and Budget in October 1997, requiring all federal agencies that collect and report data on race and ethnicity to follow these new standards.)

Poverty (Low Income)

"Low income" is defined as a person whose household income is at or below the Department of Health and Human Services (HHS) poverty guidelines. These poverty guidelines are updated annually and are used as eligibility criteria for federal programs, such as Community Services Block Grants. The 2001 poverty guidelines only reflect cost changes through 2000. Therefore, they are approximately equal to the Census Bureau poverty thresholds for calendar year 2000. Census year 2000 poverty data, however, is not yet available. The HHS poverty guidelines for 1990 and 2001 are shown in Table 6.

TABLE 6: POVERTY GUIDELINES BY FAMILY SIZE - 1990 AND 2001		
Size of Family Unit	**1990 Household Income**	**2001 Household Income**
1	$6,280	$8,590
2	$8,420	$11,610
3	$10,560	$14,630
4	$12,700	$17,650
5	$14,840	$20,670
6	$16,980	$23,690
Each additional person	Add $2,140	Add $3,020

*Note: These figures are for the 48 contiguous states and D.C. Figures for Alaska and Hawaii are higher.
Source: *Federal Register*, Vol. 66, No. 33, February 16, 2001, pp. 10695-10697.

Elderly

In assessing elderly populations, DVRPC has chosen to define only those considered extremely old, age 85 and older. This data is derived from the 2000 Census, using MCD (minor civil division) level data. Age-by-census tract for the 2000 Census is not yet available.

Car-Less

Car-less households are defined in the 1990 Census as having zero vehicle availability. This population is often referred to as "transit dependent," i.e., those who must rely on public transit for their daily travel needs and who have limited mobility. Again, 2000 Census data is not yet available.

Handicapped (Disabled)

The region's handicapped (disabled) population is defined in the 1990 Census as persons with a self-care or mobility limitation (as opposed to a work disability). Mobility limitation is defined as an inability to go outside the home alone, such as to shop or visit a doctor's office, because of a health condition that has lasted for six or more months. Self-care limitation is defined as an inability to take care of one's personal needs, such as bathing, dressing or getting around inside the home, because of a health condition that has lasted for six or more months. Year 2000 Census information is not yet available.

Female Head of Household with Child

"Female Head of Household with Child" is defined in the 2000 Census as a female maintaining a household with no husband present, and with at least one child under 18 years old who is a son or daughter by birth, marriage (a stepchild) or adoption residing in the home. This factor was chosen to add gender and children into our analysis, as well as to acknowledge the strong correlation between female heads of household with child and poverty status. In addition, this group exhibits different travel patterns and needs.

Limited English Proficiency

"Limited English Proficiency" is defined in the 1990 Census (most recent data available) as "Primary Language Spoken At Home Other Than English and Speak English "Not Very Well".

This captures the populations with a primary language other than English spoken at home, such as Spanish or one of many Asian languages, and of these, those who cannot speak English very well. We assume that an inability to speak English well can be a barrier to accessing goods and services, including transportation. In addition, identifying these populations and their locations is important to DVRPC's outreach efforts, particularly in assessing the need to make our publications and written materials available in additional languages. Limited English Proficiency status does not include those households whose primary language is other than English but who do speak English well. It would be false to assume, for instance, that all Primary Language Spoken at Home Other Than English households do not speak English well or have multiple fluencies.

Evaluation Methodology - Using Regional Thresholds

Using the identified demographic groups, a "regional threshold" (average) is determined to assess whether each census tract meets or exceeds this average. A total of all persons in the specified demographic group in the nine-county region is divided by the total nine-county population to obtain this average. Each census tract or MCD that meets or exceeds the regional average is considered an "environmental justice area". These tracts are areas of concern and sensitivity, based on their population composition, and form the basis for the remainder of the geographic analysis.

- The regional threshold for the **Minority** (non-Hispanic) population for the year 2000 is 24% (as compared to 22% in 1990). Therefore, any census tract that contains a concentration of minority, non-Hispanic residents that is equal to or greater than 24%, is considered and EJ area.
- The regional threshold for the **Hispanic** population for the year 2000 is 5% (as compared to 4% in 1990).
- The regional threshold for **Poverty** (Low Income) by household for year 1990 is 10%. Year 2000 poverty data is not yet available, but is likely to be about the same.
- The regional threshold for **Elderly**, or extremely old, persons is 2% in the 2000 Census, based on a municipality (MCD) classification.
- The regional threshold for **Car-less Households** is 18% in the 1990 census. Similar data for the year 2000 is not yet available, but it is likely to be lower.
- The regional threshold for **Handicapped** (disabled) persons is 6% in the 1990 Census.
- The regional threshold for **Female Head of Household with Child** for year 2000 is 8%.
- The regional threshold for **Limited English Proficiency** for the year 1990 is 4%.

Degrees of Disadvantage (DOD)

To evaluate the locations of the six "disadvantaged" indicators (minority, Hispanic, low income, elderly, car-less and handicapped populations), the respective municipality
and census tract maps are overlaid, using geographic information systems (GIS) technology. As a next step, a map was created showing which census tracts meet all six indicators and which tracts meet four to six, one to three, or zero indicators. The result indicates "degrees of disadvantage," with those census tracts meeting the most indicators (four or more) identified as those with the

US 30 Corridor Study

Map 7

Environmental Justice: Degrees of Disadvantage

(By Census Tract)

- 0 Degrees of Disadvantage
- 1-4 Degrees of Disadvantage
- 5 -8 Degrees of Disadvantage
- Study Area

**** Degrees of Disadvantage include: Poverty, Hispanic, Non-Hispanic Minority, Elderly, Carless,Disabled, Limited English Proficiency and Female Head of Household with Child.***

N

0 2.5 5 7.5 10 Miles

Delaware Valley
Regional Planning Commission
July 2002

Source: U.S. Census Bureau, DVRPC.

greatest environmental justice concerns. The Degrees of Disadvantage composite map for the US 30 corridor is Map 7

Application to the US 30 Corridor Study

The purpose of the US 30 Corridor Study is to identify and analyze problem areas and provide potential improvement scenarios. Such improvements fall within a wide range of options and cost ranges. If a potential improvement scenario were to evolve into a project, it could possibly have environmental justice implications, irrespective to the extent of the project's scope or cost.

With the inclusion of this environmental justice component in the US 30 Corridor Study it is our intent to identify sensitive populations within the study area. Specifically, the Degrees of Disadvantage Map can be used as an "early warning indicator" of potential EJ-sensitive areas. Individual projects in these disadvantaged areas should be further analyzed during the environmental assessment process to determine impacts on the surrounding community and potential mitigation strategies. Although an individual project may traverse only a portion of a larger, multi-census tract area, project impacts may be felt throughout a community or even in several communities (with or without areas of disadvantage). This project level review process is governed by National Environmental Policy Act (NEPA) procedures, which now incorporate EJ concerns. A more thorough analysis of environmental justice is undertaken in the report ...*and Justice for All*, the source document from which the EJ component of the US 30 Corridor Study has been derived.

OTHER STUDIES

There are a number of recently completed or on-going planning studies along the US 30 corridor. DVRPC is currently working on a parking needs assessment for PATCO stations. This study is focusing on the impacts of parking constraints on the PATCO system. In October, 2001, NJ DOT completed a needs assessment for US 30 from milepost 7.75 to 16.5, which focused on identifying deficiencies along US 30. Also, Camden County and New Jersey Office of State Planning have initiated a Haddon Avenue (CR 561)/PATCO High Speed Line Corridor study which focuses on revitalizing and redeveloping the urban and suburban centers within the corridor.

A Transportation Needs Inventory is included in the appendix. This document lists those problem locations in the corridor which have been previously identified and are either programmed for implementation on DVRPC's FY 2002 Transportation Improvement Program (TIP), listed on NJ DOT's FY 2002-2004 Study and Development Program, identified on DVRPC's Problem Identification and Prioritization report, identified as part of DVRPC's Long Range Plan (LRP) or identified in NJ DOT's US 30 Corridor Transportation Problem Statement and Route 73 Corridor Needs Assessment. By including these projects, this corridor plan becomes as comprehensive as possible in identifying the transportation needs of the corridor. These items are intended to be a complementary listing to the recommendations of this report.

III. HIGHWAY FACILITIES

US 30 is the primary east-west facility carrying traffic in the corridor. In New Jersey, US 30 connects Atlantic City with Camden City and the Ben Franklin Bridge, one of three bridges connecting Philadelphia to southern New Jersey within Camden County. Once the main facility for trips between Philadelphia and shore towns in southern New Jersey, the White Horse Pike has evolved into more of a regional route. The portion of US 30 within the study area is most commonly used for local travel, through trips and as a connector to other highway facilities. Trips to the New Jersey Shore now are more frequently made via the Atlantic City Expressway.

US 30

US 30 is a principal arterial route which varies between one and four lanes-by-direction. From milepost 0.96 to 3.9 at the western end of the corridor it is a controlled access highway, then it becomes a local access facility with signalized intersections for the remainder of the study area. This planning effort focuses on US 30 from mile post 0.96 to mile post 18.33. The following narrative describes the roadway characteristics of US 30 within each municipality in the study area moving west to east. The mileposts represent the municipal boundary. There is an overlap in mileposts in some cases because municipal boundaries may be different on the north side and the south side of US 30. The eastern boundary of Berlin Borough is at milepost 18.25. However, the corridor study area eastern boundary is NJ 73, at milepost 18.33, which is in Waterford Township. A series of aerial photographs contained at the end of this section, serves as a visual companion to the following narrative. Table 7 summarizes the traffic signal controlled intersections along US 30. All streets intersecting US 30 provide only one departure lane unless otherwise indicated.

<u>Camden City/Pennsauken Township</u>

Milepost 0.96 to 3.81

Refer to Aerial Photographs 1 to 5 on Pages 51 to 59

In Camden, US 30/Admiral Wilson Boulevard is a six lane controlled access, divided highway between the Ben Franklin Bridge and Federal Street. It increases to eight lanes between Federal Street and the Airport Circle. The speed limit is 45 m.p.h.. All turns within this stretch are accommodated via interchange ramps and there are no at-grade crossings. Land use along the south side of US 30 is largely occupied by a newly developed park with a sidewalk and trail. The north side is mostly vacant land having a few retail and service establishments scattered throughout. The Airport Circle, located in Pennsauken Township, is the confluence of US 30, NJ 38, and US 130. Eastbound US 30 is carried over the Airport Circle via a fly-over ramp. East of the circle, US 30 runs jointly with US 130 as a six lane divided, uncontrolled highway until the Cooper River bridge where the roadway narrows to four lanes. The center median consists of a Jersey barrier along the length of the co-designated section. There is one signalized intersection along this stretch of US 30 at North Park Drive. Left turns from eastbound US 30 are handled via a near-side jughandle and left turns from westbound US 30 are prohibited. There are no pedestrian amenities at this intersection. The Cooper River serves as the municipal boundary between Pennsauken and Collingswood.

Collingswood Borough

Milepost 3.81 to 5.13

Refer to Aerial Photographs 5 to 6 on Pages 59 to 61

The roadway continues as US 30/US 130 in a four lane configuration for approximately one mile between the Cooper River and the Collingswood Circle, at which point US 30 and US 130 split. From the Collingswood Circle eastward, US 30 is known locally as the White Horse Pike. At this point, US 30 narrows to one lane in each direction serving local traffic with a speed limit of 35 mph. Striped shoulders and sidewalks are present. Land use along this stretch of US 30 is primarily residential with a few professional establishments. In Collingswood Borough there are two signalized intersections. The first intersection, at Magill Avenue, does not provide left turn lanes or protected phasing on any of the four approaches. At the intersection of Collings Avenue (CR 630), left turn lanes are provided on all four approaches of the intersection but protected left turn signal phasing is not.

Oaklyn Borough/Haddon Township

Milepost 5.13 to 6.06

Refer to Aerial Photographs 7 to 8 on Pages 63 to 65

US 30 is one lane-by-direction in this section and between Collingswood Avenue and Cuthbert Boulevard (CR 636) it serves as the boundary between Oaklyn Borough and Haddon Township. The speed limit along this section is 30 mph. This segment of US 30 serves as the central business district in Oaklyn Borough. The predominant land use along this stretch of the corridor is retail. On eastbound US 30 (Oaklyn) most establishments are set back and have off-street parking, while westbound (Haddon Township) store access is from the sidewalk and on-street parking is provided. There are multiple curb cuts in each direction in this section. Pedestrian access is especially compromised in the eastbound direction of US 30 due to the multiple curb cuts. Intersections along this stretch are off-set. Moving eastward the first signalized intersection with US 30 is at East Haddon Avenue/Clinton Avenue. Neither left turn lanes or protected turn signal phasing are provided on any approach. Next is the intersection of US 30 and East Holly Avenue/West Holly Avenue. Left turn lanes and protected phasing are not provided on any approach at this location.

At the eastern edge of Oaklyn, Cuthbert Boulevard (CR 636) terminates at US 30. This intersection defines the municipal boundaries of Oaklyn, and Audubon Borough and Haddon Township. This signalized intersection provides a left turn lane with protected phasing for eastbound US 30 traffic. Westbound US 30 consists of a through lane and a dedicated right turn lane without protected phasing. Cuthbert Boulevard is a one lane-by-direction north-south principal arterial that provides a direct connection from US 30 to NJ 70 and NJ 38. Cuthbert Boulevard does not provide a left-turn lane.

Audubon Borough

Milepost 5.92 to 7.0

Refer to Aerial Photographs 8 to 9 on Pages 65 to 67

In Audubon Borough US 30 is one lane-by-direction with striped shoulders and a posted speed limit of 35 mph. The land use is a mix of retail, both newer construction and converted older homes, interspersed with professional offices and a few residences. Sidewalks are present throughout. Moving eastward, the first signal is at the three-leg intersection of US 30 and Nicholson Road (CR 635) in Audubon Borough. A dedicated right turn lane is provided in the eastbound direction. Left turns from US 30 westbound have a protected signal phase but not a striped dedicated turn lane. The next signalized intersection is at Merchant Street. No left turn lanes or protected turn signal phasing is provided on any approach at this intersection. Next is the signal at US 30 and East Pine Street/West Pine Street. Left turns are provided on the US 30 approaches but no protected turn signal phasing. On both approaches of Pine Street, shared through/right and dedicated left turns are provided but not protected phasing.

Haddon Heights Borough

Milepost 7.0 to 7.90

Refer to Aerial Photographs 9 to 10 on Pages 67 to 69

US 30 continues as one lane-by-direction with striped shoulders and a posted speed limit of 35 mph. Along US 30 in Haddon Heights the land use is predominantly office and professional uses converted from older Victorian era homes with private driveways. Sidewalks are provided. The next cross street along US 30 is King's Highway (CR 551), an important north-south route providing access to the PATCO High Speed Line's Haddonfield station, and to points in northern Camden County. Kings Highway serves as the border between Audubon and Haddon Heights Boroughs. This intersection is signalized with left turn lanes and protected turn signal phasing provided for each of the four approaches. The next signalized intersection is at US 30 and Station Avenue (CR 656). Left turn lanes are provided on all four approaches although protected turn signal phasing is only provided on US 30 westbound. At the eastern edge of Haddon Heights is the on-ramp to southbound I-295, located just west of the Clements Bridge Road circle. The intersection of US 30 and Clements Bridge Road (NJ 41) is the boundary between Haddon Heights and Barrington Boroughs.

Barrington Borough

Milepost 7.90 to 8.35

Refer to Aerial Photographs 10 to 11 on Pages 69 to 71

Barrington Borough has only a small section of frontage on US 30 occupied mostly by the grade-separated I-295 interchange #29 with US 30. There are a few businesses and one residence located along US 30 in Barrington Borough. Pedestrian access is limited due to non-continuous sidewalks. The speed limit is 35 mph. This location marks the beginning of the four lane section of US 30, with two lanes in each direction and no shoulders. The first signalized intersection is at US 30 and Clements Bridge Road (NJ 41). This is a signalized circle which

has been modified to include two through lanes by direction for US 30. All turns are made via the circle.

The next intersection is at US 30 and Copley Road. The US 30 eastbound approach has two through lanes and a channelized left turn lane with protected turn signal phasing for access to the I-295 northbound on-ramp via Copley Road. The US 30 westbound approach has a through lane and a shared through/right turn lane with a protected right turn signal phase. Copley Road is one-lane by direction but has dedicated lanes for left and right turns in the southbound direction. The northbound I-295 off-ramp to eastbound US 30 merges just before the Copley Road intersection. East of Copley Road, on eastbound US 30, is a near-side jug handle for left turns onto Bell Avenue.

Lawnside Borough

Milepost 8.26 to 9.11

Refer to Aerial Photographs 11 to 12 on Pages 71 to 73

Moving east into Lawnside Borough, US 30 is two lanes-by-direction and is controlled at three signalized intersections. Between Mouldy Road and Gloucester Pike, eastbound US 30 increases to three lanes. The land use along this stretch of US 30 includes the White Horse Plaza, a large big box shopping center, eastbound and a mix of residences and retail westbound. The speed limit is 40 mph. Pedestrian movements in this stretch are somewhat compromised due to multiple curb cuts. At the intersection of US 30 and Mouldy Road/White Horse Plaza drive, left turns from US 30 are made from the inner lane, protected turn signal phasing is provided on US 30 eastbound only. The Mouldy Road approach is one lane. The shopping center drive has two approach lanes and one departure lane. The next intersection is at US 30 and Gloucester Pike (CR 659). On eastbound US 30, left turns are made from the inner lane and no protected turn signal phasing is provided. Right turns are made via a channelized right turn lane. On westbound US 30 there is a near-side jughandle for all turning movements. Left turns from US 30 are not permitted at the three legged intersection of US 30 and Charleston Avenue. Charleston Avenue is a one-lane southbound road. The next intersection is US 30 and Davis Road/Charman Avenue. This is an off-set intersection. At this location both approaches of US 30 have channelized right turns onto the intersecting streets (Davis Road eastbound and Charman Avenue westbound). No dedicated left turn lanes or protected turn signal phasing is provided on any leg of this intersection. Both Davis Road and Charman Avenue are one lane-by-direction. Davis Road/Charman Avenue serves as the boundary between Lawnside and Magnolia Boroughs**.**

Magnolia Borough

Milepost 9.08 to 10.04

Refer to Aerial Photographs 12 to 13 on Pages 73 to 75

US 30 continues as two lanes-by-direction in Magnolia Borough. Land use on this section of US 30 is predominantly composed of retail establishments serving as Magnolia Borough's

central business district. Sidewalks are present as well as curb cuts for each business. The speed limit is 35 mph. There are two signalized intersections along US 30 in Magnolia Borough. Moving eastward the first is at US 30 and Warwick Road (CR 669). Warwick Road is an important north-south route because it provides access to I-295 and the PATCO High Speed Line's Haddonfield Station. Left turns from US 30 are made from the inner lane and no protected turn signal phasing is provided. Both approaches of Warwick Road provide a through lane and a dedicated left turn lane with protected turn signal phasing. The next intersection is at US 30 and Evesham Road (CR 544). Evesham Road is an important arterial route because it carries a significant volume of traffic to and from the PATCO High Speed Line's Ashland Station. In both directions on US 30, left turns are made from the inner lane. Protected left turn signal phasing is provided on US 30 westbound only. Both approaches of Evesham Road have dedicated left turn lanes with protected turn signal phasing and shared through/right turn lanes.

Somerdale Borough

Milepost 10.04 to 11.54

Refer to Aerial Photographs 13 to 15 on Pages 75 to 79

US 30 continues as a four lane facility through Somerdale with three signalized intersections within the borough. The land use, consistent with Magnolia Borough and other surrounding towns, is primarily retail and commercial establishments, in both stand alone and strip developments, mixed with a few residences. Sidewalks are present but pedestrian access is somewhat compromised by frequent curb cuts. The speed limit is 35 mph. Moving eastward the first intersection is at US 30 and Evergreen Avenue/Highland Avenue (CR 754). On the US 30 approaches, left turns are made from the inner lane with no protected turn signal phasing provided. The intersecting streets are both one lane- by-direction. The intersection of US 30 and Crestwood Avenue is configured the same as the Evergreen/Highland Avenue intersection. The next intersection is at US 30 and Somerdale Road (CR 678). Somerdale Road is a minor arterial facility that provides direct access to the Echelon Mall. At this location, left turns are made from the inner lanes and a protected turn signal phase is provided on US 30 eastbound only. Both approaches of Somerdale Road provide left turn lanes with protected turn signal phasing and a shared through/right turn lane.

US 30 follows the north-south municipal boundary between Somerdale and Stratford Boroughs between Curtis Avenue and Berlin Road (CR 702). The land use within this shared stretch of US 30 is consistent with surrounding municipalities, having a mix of retail and commercial uses with a few residences interspersed. Sidewalks are present and curb cuts are frequent. The speed limit is 35 mph. There are two off-set signalized intersections. The first is at US 30 and East Grant Avenue/Colby Avenue. Left turns from both US 30 approaches are made from the inner lane and no protected turn signal phasing is provided. Both intersecting streets have one approach lane. The signal phasing at this intersection provides a separate cycle for each side street. An identical configuration and signal phasing is in place at the intersection of US 30 and Vassar Avenue.

Stratford Borough

Milepost 10.92 to 12.33

Refer to Aerial Photographs 14 to 16 on Pages 77 to 81

In Stratford Borough, US 30 increases from four to five lanes to accommodate a third travel lane in the eastbound direction between CR 673 and Hunt Avenue. US 30 through Stratford Borough is similar in both land use and lane configuration to Lawnside Borough. There is a big box shopping center fronting eastbound US 30 and several stand alone retail developments on US 30 westbound. Although sidewalks are present along US 30, pedestrian movements are compromised due to multiple curb cuts. The speed limit is 35 mph. The first signalized intersection is at US 30 and Laurel Road/White Horse Avenue (CR 673). Left turns are prohibited from US 30 at the intersection and are accommodated by far-side jug handles in both directions. The northbound Laurel Road approach is two lanes: a left turn lane and a through lane. Southbound White Horse Road is two lanes, a left turn lane with protected turn signal phasing and a shared through/right turn lane. CR 673 is a principal arterial which carries a significant volume of traffic to and from the PATCO/ NJ Transit Lindenwold Station. Moving eastward the next signalized intersection is at US 30 and New Road. New Road connects directly to one of the main access drives to the PATCO/NJ Transit station. Left turns from US 30 are made from the passing lane and protected turn signal phasing is not provided. At the US 30 intersection, northbound New Road has two lanes: a left turn lane and a through lane. Southbound New Road has three lanes: a left, through, and right turn lane. This signal incorporates a separate green cycle for each leg of New Road.

Lindenwold Borough/Laurel Springs Borough

Milepost 12.33 to 13.53

Refer to Aerial Photographs 16 to 18 on Pages 81 to 85

The western end of this section of US 30, from Broadway Avenue (CR 697) to Stone Road (CR 669), follows the municipal boundary between Lindenwold and Laurel Springs Boroughs. US 30 is two lanes-by-direction. The speed limit is 40 mph. Land use in this section is fairly consistent with surrounding towns having a combination of retail and commercial establishments mixed with a few residences. Multiple curb cuts are present along this stretch and sidewalks are discontinuous. Moving eastward the first signalized intersection is at US 30 and South Avenue. Left turns from US 30 are made via the inner lane and no protected turn signal phasing is provided. South Avenue is one lane-by-direction. The next signalized intersection is at US 30 Linden Avenue (CR 700). The north side of Linden Avenue is a county route and the south side is a local street. This off-set intersection allows equal green time to both sides of Linden Avenue via separate phases. Left turns from US 30 are made from the inner lane and protected phasing is not provided. Both approaches of Linden Avenue are two lanes: a shared through/left turn lane and a right turn lane. White Horse Avenue meets US 30 at a T-intersection. Left turns from westbound US 30 are not permitted at this location

Clementon Borough/Lindenwold Borough

Milepost 13.44 to 14.91

Refer to Aerial Photographs 18 to 20 on Pages 85 to 89

US 30 continues as four lanes in Clementon Borough and has a speed limit of 35 mph. Land use is a mix of retail and professional with a few residences interspersed. Sidewalks are present along with multiple curb cuts. The speed limit is 35 mph. There are three signalized intersections within the borough. The first is at US 30 and Gibbsboro Road (CR 686). Gibbsboro Road, a minor arterial, runs along the municipal boundary between Lindenwold and Clementon Boroughs. Left turns from US 30 are made from the inner lane and a protected turn signal phase is provided only in the eastbound direction. Both approaches of Gibbsboro Road are two lanes providing a left turn lane and a shared through/right turn lane with no protected turn signal phasing provided. The next signalized intersection is at US 30 and Trout Avenue/Brand Avenue. No protected turn signal phasing is provided on any approach of this intersection. Trout Avenue and Brand Avenue are both one lane-by-direction. The third intersection is at US 30 and New Freedom Road (CR 691). Located at the eastern border of the borough this is an angled, T-intersection meeting US 30 on the eastbound side. Left turns from US 30 westbound are made via the inner lane and protected turn signal phasing is not provided. New Freedom Road is one lane-by-direction. To the east side of New Freedom Road, US 30 serves as the boundary between Lindenwold Borough to the north and Clementon Borough to the south. The speed limit in this vicinity is 45 mph.

Berlin Borough

Milepost 14.91 to 18.25

Refer to Aerial Photographs 20 to 24 on Pages 89 to 97

The portion of US 30 through Berlin Borough is more than three miles in length and varies widely in character. The western portion between Day Avenue and Milford Road/Cross Keys Road (CR 689) continues from Clementon Borough as four lanes with a speed limit of 45 mph. Land use in this section is slightly less dense compared to segments further west and includes a mix of retail and residential. US 30 narrows to two lanes with wide shoulders and on-street parking between Milford Road/Cross Keys Road and East Taunton Avenue. This section is Berlin Borough's central business district with a mix of retail and professional uses. The speed limit is 35 mph. In the eastern third of Berlin Borough US 30 returns to four lanes with a speed limit of 45 mph. The land use mix along this stretch includes big box retail, retail, residences, and a large tract of wooded land on the north side of US 30. Sidewalks are present throughout.

There are five signalized intersections along US 30 within Berlin Borough. The first intersection is at US 30 and Franklin Avenue (CR 692). Left turns from both directions of US 30 are made from the inner lane. Northbound Franklin Avenue provides a shared through/left and a right turn lane and southbound Franklin Avenue has a one approach lane. No protected turn signal phasing is provided on any approach at this intersection.

Next is the five-legged US 30 and Clementon-Berlin Road (CR 534)/Park Drive (CR 690) intersection. Clementon-Berlin Road merges with US 30 at the intersection. The other two legs are formed by Park Drive and a nearside jug handle on westbound US 30 which accommodates westbound US 30 U-turns and left turns to Park Drive. US 30 has two approach lanes in each direction. Clementon-Berlin Road has two through approach lanes and Park Drive has one approach lane. The next intersection in this vicinity is at US 30 and Milford Road/Cross Keys Road (CR 669), both of which are one lane approaches. A protected turn signal phase is provided for left turns from Milford Road. Left turns are prohibited from Cross Keys Road and are accommodated via Park Drive. Haddon Avenue (CR 561) forms a fifth leg at this intersection but traffic on the approach of this road is not controlled by the traffic signal. Eastbound Haddon Avenue terminates at this intersection but only permits right turns onto westbound US 30.

The next two intersections are also in close proximity to one another. The first is at US 30 and East Taunton Avenue/drug store drive. US 30 carries two lanes west of East Taunton Avenue and four lanes to the east. No protected turn signal phasing is provided for left turns from US 30. East Taunton Avenue is one lane-by-direction and the drug store drive approach provides a shared through/left turn and a right turn lane. The easternmost signalized intersection within the study area is at US 30 and Tansboro Road (CR 561)/Washington Avenue. Left turns from US 30 are made via the inner lane. Both side streets are one lane-by-direction. No protected turn signal phasing is provided on any approach of this intersection.

TABLE 7: CHARACTERISTICS OF US 30 SIGNALIZED INTERSECTIONS

INTERSECTING STREETS	MILEPOST/MUNICIPALITY	INTERSECTION APPROACH CONFIGURATION	SIGNAL TYPE	PEDESTRIAN AMENITIES
North Park Dr. (CR 628)	Milepost 3.52 Pennsauken	US 30/US 130: 3 lanes-by-direction, divided N. Park Dr. NB: shared through/right turn, left turn N. Park Dr. SB: left turn, right turn	US 30 EB: left turns via near side jug handle US 30 WB: left turns prohibited N. Park Dr. NB: left turn, shared through/right turn N. Park Dr. SB: left turn, right turn	None
Magill Ave.	Milepost 4.69 Collingswood	All approaches: 1 lane-by-direction	No protected phasing	All approaches: signals, striped crosswalks
Collings Ave. (CR 630)	Milepost 4.87 Collingswood	All approaches: left turn, through	No protected phasing	All approaches: signals, striped crosswalks
E. Haddon Ave./W. Clinton Ave. **Off-set*	Milepost 5.44 Oaklyn	All approaches: 1 lane-by-direction	No protected phasing	US 30 WB, E. Haddon Ave., W. Clinton Ave.: signals, striped crosswalks
Holly Ave.	Milepost 5.74 Oaklyn / Haddon Twp.	US 30: 1 lane-by-direction Holly Ave. SB: 2 lanes (one way) Holly Ave. NB: 1 lane-by-direction	No protected phasing	All approaches: signals, striped crosswalks
Cuthbert Blvd. (CR 630) **T-intersection*	Milepost 5.92 Oaklyn / Haddon Twp. / Audubon	US 30 EB: left turn, through US 30 WB: right turn, through Cuthbert Blvd.: 1 lane-by-direction	US 30 EB: protected left turn phase, US 30 WB: protected right turn phase	US 30 EB: signals, striped crosswalk Cuthbert Blvd.: striped crosswalk
Nicholson Rd. (CR 635) **T-intersection*	Milepost 6.08 Audubon	US 30 EB: right turn, through US 30 WB: through Nicholson Rd.: 1 lane-by-direction	US 30 WB: Protected left turn phase	US 30 WB: signals, striped crosswalk Nicholson Rd.: signals, striped crosswalk
Merchant St.	Milepost 6.20 Audubon	All approaches: 1 lane-by-direction	No protected phasing	All approaches: signals, striped crosswalks
Pine St.	Milepost 6.55 Audubon	US 30: 1 lane-by-direction Pine St.: left turn, shared through/right turn	No protected phasing	All approaches: signals, striped crosswalks
Kings Highway (CR 551)	Milepost 6.98 Audubon / Haddon Heights	All approaches: left turn, shared through/right turn	All approaches: protected left turn phasing	All approaches: signals, striped crosswalks
Station Ave. (CR 656)	Milepost 7.27 Haddon Heights	All approaches: left turn, shared through/right turn	US 30 WB: protected left turn phase	All approaches: signals, striped crosswalks
Clements-Bridge Rd. (NJ 41) **Modified circle*	Milepost 7.90 Haddon Heights / Barrington	US 30: 2 lanes-by-direction NJ 41: left turn, shared through/left turn, through, channelized right turn	All turns accommodated via the signalized circle. US 30 has 4 lanes cutting through the circle.	All approaches: signals, striped crosswalks
Copley Rd. (CR 666) **T-intersection*	Milepost 8.16 Barrington	US 30 EB: 2 through, 1 left turn US 30 WB: 1 lane-by-direction Copley Rd.: left turn, right turn	US 30 EB: protected left turn phasing	None
Mouldy Rd.	Milepost 8.46 Lawnside	US 30 EB: 3 lanes US 30 WB: 2 lanes Mouldy Rd.: 1 lane-by-direction Plaza drive: shared left/through, right turn	US 30 EB: protected left turn phasing	US 30 and Mouldy Rd. approaches: signals, striped crosswalks

TABLE 7: CHARACTERISTICS OF US 30 SIGNALIZED INTERSECTIONS

INTERSECTING STREETS	MILEPOST/MUNICIPALITY	INTERSECTION APPROACH CONFIGURATION	SIGNAL TYPE	PEDESTRIAN AMENITIES
Gloucester Rd./Pike (CR 659)	Milepost 8.73 Lawnside	US 30 EB: 3 lanes, channelized right turn US 30 WB: 2 lanes Gloucester Rd./Gloucester Pk.: 1 lane-by-direction	US 30 WB: left turns via near side jug handle US 30 EB: left turns via passing lane No protected phasing	US 30: push buttons, striped crosswalks
Charleston Ave. (CR 668) **T-intersection*	Milepost 8.90 Lawnside	US 30: 2 lanes-by-direction Charleston Ave.: 1 lane, one way SB to US 30	No protected phasing.	US 30: signals, striped crosswalks Charleston Ave.: striped crosswalks
Davis Rd./Charman Ave. **Off-set*	Milepost 9.08 Lawnside / Magnolia	US 30: 2 lanes-by-direction, channelized right turn Davis Rd./Chapman Ave.: 1 lane-by-direction	No protected phasing.	All approaches: push buttons, striped crosswalks
Warwick Rd. (CR 669)	Milepost 9.24 Magnolia	US 30: 2 lanes-by-direction, Warwick Rd.: left turn, shared through/right turn	Delayed green for Warwick Rd. NB	US 30: striped crosswalks
Evesham Rd. (CR 544)	Milepost 9.80 Magnolia	US 30: 2 lanes-by-direction Evesham Rd.: left turn, shared through/right turn	US 30 EB: protected left turn phase Evesham Rd.: protected left turn phase	All approaches: signals, striped crosswalks
Evergreen Ave.	Milepost 9.70 Somerdale	US 30: 2 lanes-by-direction Evergreen Rd.: 1 lane by-direction	No protected phasing	All approaches: signals, striped crosswalks
Crestwood Ave.	Milepost 10.39 Somerdale	US 30: 2 lanes-by-direction Crestwood Ave.: 1 lane-by-direction	No protected phasing	All approaches: signals, striped crosswalks
Somerdale Rd. (CR 678)	Milepost 10.67 Somerdale	US 30: 2 lanes-by-direction Somerdale Rd.: left turn, shared through/right turn	US 30 EB: protected left turn phase Somerdale Rd.: protected left turn phase	All approaches: signals, striped crosswalks
Colby Ave./Grant Ave. ** Off-set*	Milepost 10.95 Somerdale / Stratford	US 30: 2 lanes-by-direction Colby Ave./Grant Ave.: 1 lane-by-direction	Delayed green for Grant Ave.	All approaches: signals, striped crosswalks
Vassar Ave. ** Off-set*	Milepost 11.41 Somerdale / Stratford	US 30: 2 lanes-by-direction Vassar Ave.: 1 lane-by-direction	Delayed green for Vassar Ave. SB.	All approaches: signals, striped crosswalks
Laurel Rd./White Horse Rd. (CR 673)	Milepost 11.66 Stratford	US 30 EB: 3 lanes US 30 WB: 2 lanes Laurel Ave./White Horse Rd.: left turn, through	US 30: left turns via far-side jug handles Laurel Ave.: protected left turn phase	US 30 EB: signals, striped crosswalks
New Rd.	Milepost 11.95 Stratford	US 30 EB: 3 lanes US 30 WB: 2 lanes New Rd.: left turn , shared through/right-left turn	Delayed green for New Rd NB.	US 30 EB: push button, striped crosswalks
South Ave.	Milepost 12.67 Laurel Springs / Lindenwold	US 30: 2 lanes-by-direction South Ave.: 1 lane-by-direction	No protected phasing	All approaches: signals, striped crosswalks
Linden Ave. ** Off-set*	Milepost 12.90 Lindenwold	US 30: 2 lanes-by-direction Linden Ave.: shared through/left turn, right turn	Delayed green for Linden Ave. NB.	All approaches: signals, striped crosswalks
White Horse Ave. ** T intersection*	Milepost 13.10 Lindenwold	US 30: 2 lanes-by-direction, EB: channelized right turn White Horse Ave.: left turn, shared right/left turn	No protected phasing	All approaches: signals, striped crosswalks
Gibbsboro Rd. (CR 686)	Milepost 13.53 Lindenwold / Clementon	US 30: 2 lanes-by-direction Gibbsboro Rd.: left turn, shared through/right turn	US 30 EB: protected left turn phase	All approaches: signals, striped crosswalks

TABLE 7: CHARACTERISTICS OF US 30 SIGNALIZED INTERSECTIONS

INTERSECTING STREETS	MILEPOST/MUNICIPALITY	INTERSECTION APPROACH CONFIGURATION	SIGNAL TYPE	PEDESTRIAN AMENITIES
Brand Ave./ Trout Ave.	Milepost 13.85 Clementon	US 30: 2 lanes-by-direction Brand Ave./Trout Ave.: 1 lane-by-direction	No protected phasing	All approaches: push buttons, striped crosswalks
New Freedom Rd. (CR 691) **T-intersection*	Milepost 14.30 Clementon	US 30: 2 lanes-by-direction New Freedom Rd.: 1 lane-by-direction	No protected signal phasing	US 30 EB: signals, striped crosswalk New Freedom Rd.: signals, striped crosswalk
Franklin Ave. (CR 692)	Milepost 15.51 Berlin Borough	US 30: 2 lanes-by-direction Franklin Ave. NB: shared through/left, right turn Franklin Ave. SB: 1 lane-by-direction	No protected phasing	US 30 EB: striped crosswalks
Park Dr.(CR 690)/Clementon-Berlin Rd (CR 534)	Milepost 16.29 Berlin Borough	US 30: 2 lanes-by-direction Clementon-Berlin Rd. EB: 2 lanes Park Dr. NB: 1 lane-by-direction Jug handle: left turn, shared through/right turn.	US 30 WB: left turns made via near side jug handle	All approaches: striped crosswalks, signals.
Milford Rd./Berlin-Cross Keys Rd. (CR 689)	Milepost 16.51 Berlin Borough	US 30 EB: 2 lanes-by-direction US 30 WB: 1 lane-by-direction Cross-Keys Rd/Milford Rd.: 1 lane-by-direction	Milford Rd.: protected left turn phase	All approaches: push buttons, striped crosswalks
E. Taunton Ave./drug store drive	Milepost 16.95 Berlin Borough	US 30 EB: 1 lane-by-direction US 30 WB: 2 lanes-by-direction E. Taunton Ave.: 1 lane-by-direction drug store drive: shared through/left turn, right turn	No protected phasing	US 30, E Taunton Ave. approaches: striped crosswalks, signals drug store approach: signals only
Washington Ave./ Tansboro Rd. (CR 561)	Milepost 17.05 Berlin Borough	US 30: 2 lanes-by-direction Washington Ave./Tansboro Ave.: 1 lane-by-direction	No protected phasing	All approaches: push buttons, striped crosswalks

OTHER MAJOR ROUTES

East-West Routes

CR 561 and CR 727/East Atlantic Avenue are the only other major facilities carrying east-west traffic throughout the corridor. South of the corridor study area, NJ 168, known as the Black Horse Pike, also carries east-west traffic. All other east-west facilities are local roads. At the western end of the study area these three routes (CR 561, US 30, NJ 168) parallel each other closely. Moving eastward, NJ 168 branches away from the study area to the south, while CR 561 moves outside the study area to the north but then re-enters to the east in Berlin Township and again intersects US 30 just east of Berlin Borough. Ultimately, NJ 168 and CR 561 serve different areas and cannot be used interchangeably as alternate routes to US 30, and warrant individual corridor studies.

CR 727/East Atlantic Avenue has one lane in each direction. It is aligned parallel to an active freight rail line. Although this facility is used locally as a parallel route to US 30, it fails as a reliever route due to multiple intersections with north south routes, both signalized and unsignalized. Left turns and through movements are very difficult at the unsignalized intersections during periods of high volume.

North-South Routes

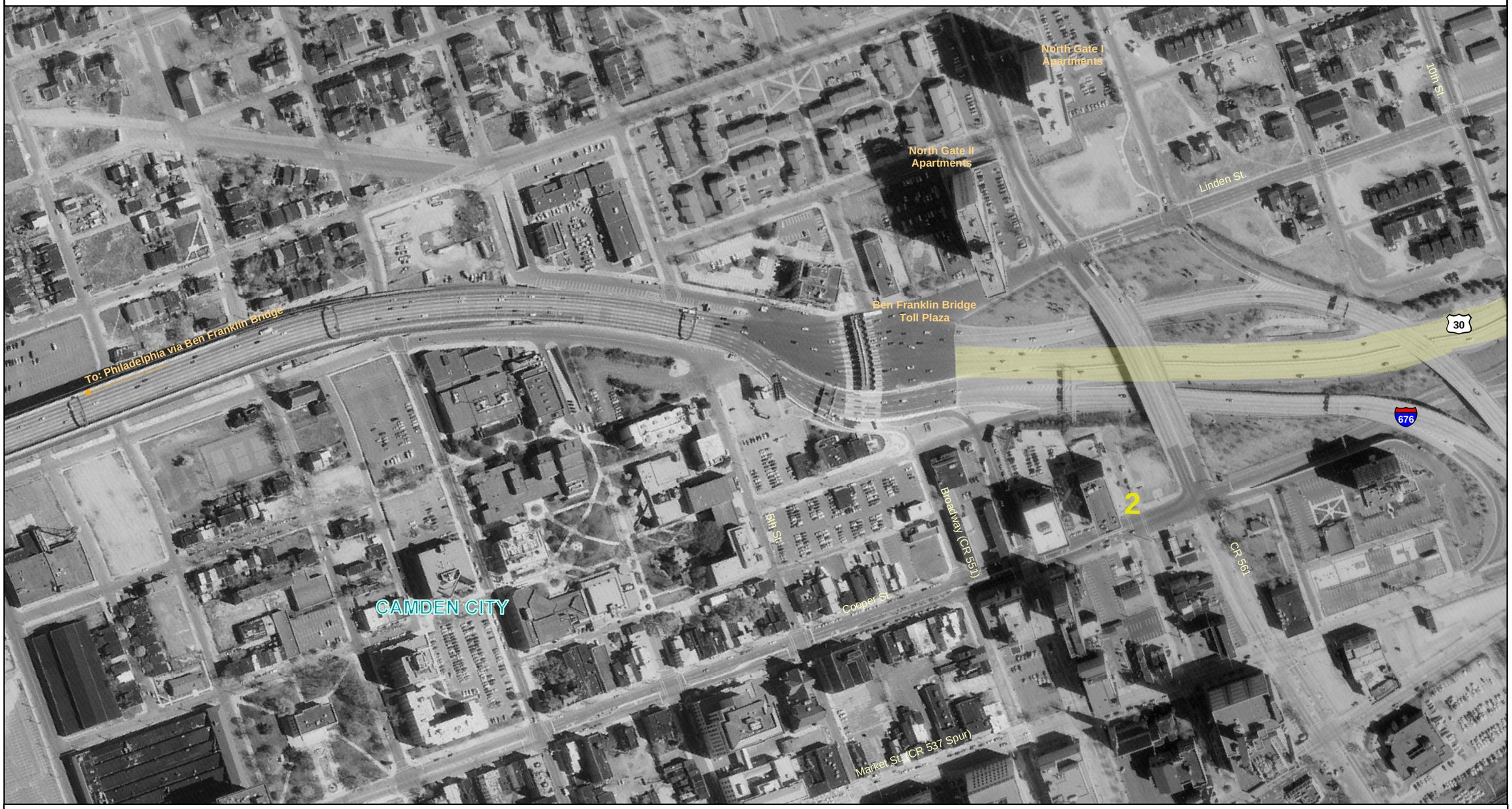
There are five major north-south highway facilities intersecting US 30 within the study area, I-676, US 130, I-295, the New Jersey Turnpike and NJ 73. I-676 is a six-lane interstate which runs between the Ben Franklin Bridge and I-76 and the Walt Whitman Bridge. US 130 connects the Delaware Memorial Bridge in the south to US 1 in Middlesex County to the north. Within the study area it runs jointly with US 30 through Woodlynne Borough, Collingswood Borough, Camden City, and Pennsauken Township. This facility is predominantly three lanes in each direction and carries mostly regional traffic. It has an excessive number of curb cuts and is controlled by signals throughout. I-295 and the New Jersey Turnpike are both limited access facilities. Both routes connect the Delaware Memorial Bridge with northern New Jersey. I-295 has three interchanges within the study area: #29 at US 30 in Haddon Heights and Barrington Boroughs, #30 at Warwick Road (CR 669) in Lawnside Borough, #31 at the PATCO Woodcrest Station in Cherry Hill Township. Interchange #32 at Haddonfield Road (CR 561) in Cherry Hill Township is just north of the study area. The New Jersey Turnpike is a toll highway providing mobility for long distance traffic. The Turnpike closely follows I-295 but does not have any interchanges within the study area. The closest interchange is at NJ 168, just south of the study area. NJ 73 is in the eastern end of the study area. It is two lanes-by-direction within the study area and has a grade-separated interchange with US 30.

US 30 is also intersected by several cross-corridor routes which provide access into and through the corridor. These routes include NJ 41, Collings Avenue (CR 630), Cuthbert Boulevard (CR 636), Nicholson Road (CR 635), Kings Highway (CR 551), Warwick Road (CR 669), Evesham Road (CR 544), Somerdale Road (CR 678), Laurel Road/White Horse Road (CR 673), Gibbsboro Road (CR 686) and Cross Keys Road (CR 689). These facilities serve as commuting

routes for both the study area municipalities and population centers in southern Camden County and Gloucester County. These routes are significant because they provide access to US 30, I-295, and the PATCO High Speed Line. They are predominately one lane in each direction with left turn lanes and protected signal phasing at selected intersections. Short stretches of localized widening to four lanes are present along many of these routes. Each route traverses older established neighborhoods and/or business districts where pedestrian traffic of school children and patrons of retail establishments is commonplace. Traffic congestion during peak periods on most of these routes was reported as typical by municipal representatives.

Milepost 1.00 1.06 1.26

0 0.025 0.05 0.1 0.15 0.2 Miles



DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 Signalized Intersections

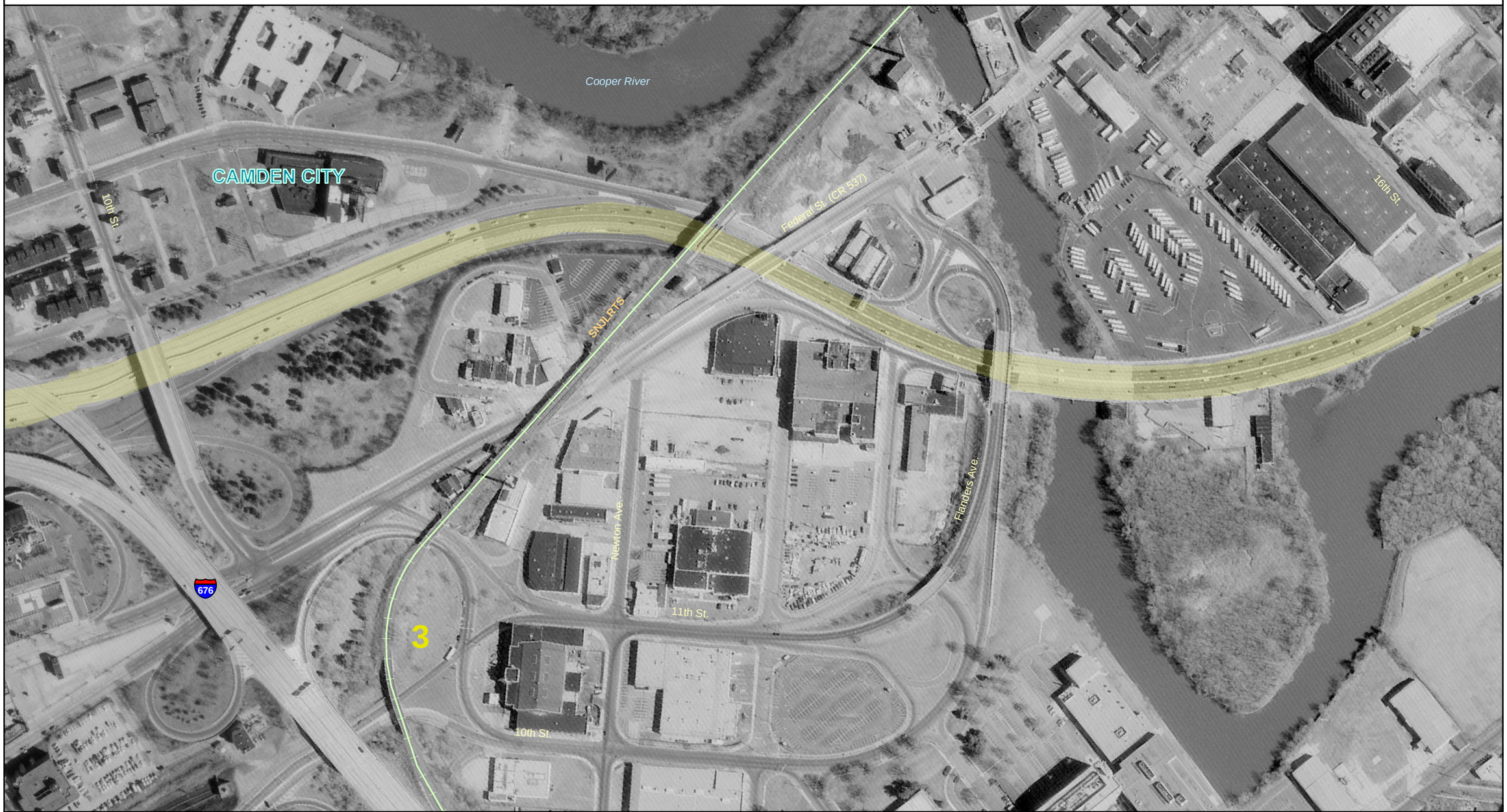
6 Problem Location

Municipal Boundary

AERIAL PHOTOGRAPH 1

Milepost 1.26 1.63 1.80 2.04

0 0.025 0.05 0.1 0.15 0.2 Miles



DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 Signalized Intersections
6 Problem Location
Municipal Boundary

AERIAL PHOTOGRAPH 2

Milepost 2.04 2.49 2.77

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

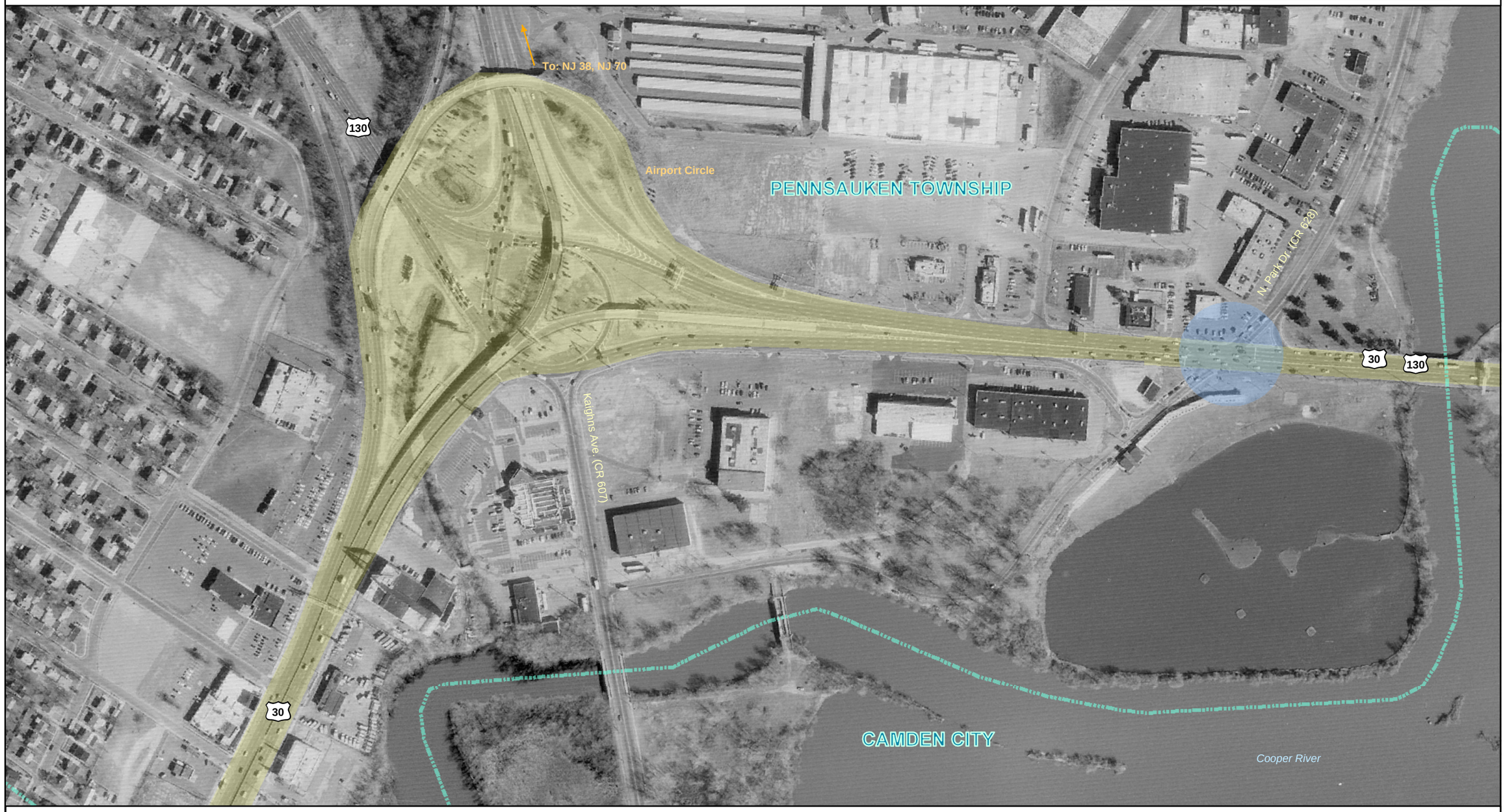
N

US 30 Signalized Intersections
6 Problem Location
Municipal Boundary

AERIAL PHOTOGRAPH 3

Milepost 2.90 3.16 3.52 3.63

0 0.025 0.05 0.1 0.15 0.2 Miles



DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 signalized intersections

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 4

Milepost 3.63 4.07 4.27

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 Signalized Intersections
6 Problem Location
Municipal Boundary

AERIAL PHOTOGRAPH 5

Milepost 4.44 4.69 4.87 5.13

0 0.025 0.05 0.1 0.15 0.2 Miles

COLLINGSWOOD BOROUGH

Parkview Apartments

6

30

130

Harrison Ave.

Magill Ave.

Collings Ave. (CR 620)

Newton Creek

WOODLYNNE BOROUGH

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 6

Milepost 5.13 | 5.44 | 5.74 | 5.85

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 7

5.92 | 6.08 | 6.20 | 6.55 | Milepost

0 0.025 0.05 0.1 0.15 0.2 Miles

HADDON TOWNSHIP

AUDUBON BOROUGH

OAKLYN BOROUGH

Cuthbert Blvd. (CR 636)

W. Pine St.

10

11

12

30

Merchant St.

Graisbury Ave. (CR 645)

E. Pine St.

Newton Ave.

E. Atlantic Ave. (CR 727)

Manor Ave.

W. Atlantic Ave. (CR 744)

Nicholson Rd. (CR 635)

Creek

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 8

6.62 6.75 6.98 7.27 Milepost

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 9

Milepost 7.42 7.67 7.90 7.99

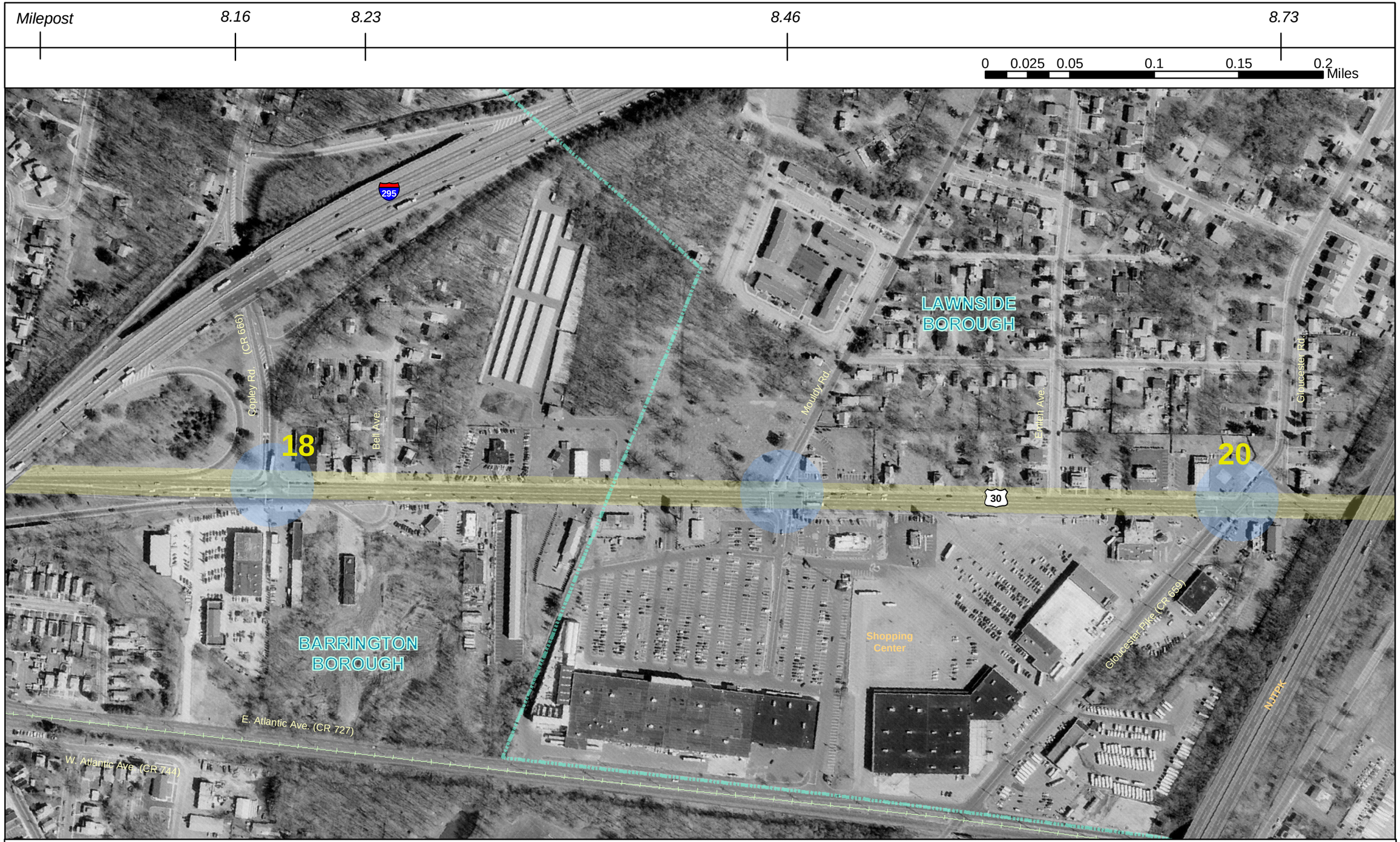
0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 10



DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 11

8.82 | 8.90 | 9.24 | 9.47 | Milepost

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 12

Milepost 9.60 9.70 10.04 10.23

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 13

Milepost 10.34 10.54 10.67 11.02

0 0.025 0.05 0.1 0.15 0.2 Miles

SOMERDALE BOROUGH

Crestwood Ave.
Maiden Ave.
Cedar Ave.
Somerdale Rd. (CR 678)
Hartnet Ave.
Grant Ave.
30
24
Hilltop Ave.
Ogg Ave. (CR 677)
Colby Ave.
Cooper Ave.
STRATFORD BOROUGH
HI-NELLA BOROUGH

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 14

11.07 | 11.41 | 11.52 | 11.66 | Milepost

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 15

Milepost 11.95 12.21 12.53

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 16

12.53 | 12.67 | 12.97 | 13.10 | Milepost

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 17

Milepost 13.40 13.53 13.85 13.96

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 18

Milepost 14.11 14.30 14.57

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 signalized intersections

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 19

Milepost 14.91 15.09 15.29 15.51

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 20

15.63 | 15.90 | 16.06 | 16.29 | Milepost

0 0.025 0.05 0.1 0.15 0.2 Miles

BERLIN TOWNSHIP

Haddon Ave. (CR 561)

Egg Harbor Rd.

Cedar Ave.

Elm Ave.

Heights Ave.

Park Ave.

30

Brill Ave.

BERLIN BOROUGH

Clementon-Berlin Rd. (CR 534)

Park Dr. (CR 751)

Park Dr. (CR 690)

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 signalized intersections

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 21

Milepost 16.51 16.74 16.95 17.05

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 22

17.05 Milepost 17.32 17.66

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 23

Milepost 18.00 18.33

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

US 30 signalized intersections
6 Problem location
Municipal boundary

AERIAL PHOTOGRAPH 24

IV. TRANSPORTATION PROBLEMS AND POTENTIAL IMPROVEMENT SCENARIOS

CORRIDOR-WIDE TRANSPORTATION PROBLEMS AND POTENTIAL IMPROVEMENT SCENARIOS

Throughout the development of this report several common types of problems kept coming to the forefront when meeting with representatives throughout the corridor. It was decided to tackle these issues as corridor-wide concerns instead of as isolated problem locations. That decision was made because there is a finite number of strategies for many of the issues and it was much more efficient to deal with them collectively rather than individually. The seven common issues identified were: (1) left turns at intersections and mid-block; (2) off-set intersections; (3) numerous curb cuts; (4) pedestrian and bicycle amenities; (5) pavement rutting and drainage; (6) use of parallel routes to avoid congestion on US 30; and (7) heavy congestion on north-south roads.

A description of the nature of each problem is provided. This outlines the nature of the problem and singles out specific locations where the issue was particularly problematic. Several strategies are then presented to help remediate the problem. They are not an inclusive listing but rather a screening of what is within the realm of appropriateness. Not all strategies will be applicable for each specific location where the common problem was identified. They are listed, though to give an overview of what has been done in other areas in similar situations. This section is intended to be a resource screening that can be used by stakeholders to provide a preliminary checklist of strategies to pursue at a particular location. Depending on the circumstances additional studies may be warranted before a recommended solution is identified.

LEFT TURNS AT INTERSECTIONS AND MID-BLOCK

Identified Problem:

This is arguably the biggest issue within the entire corridor. Many municipalities noted the difficulty, and often danger, involved in making a left turn along US 30. Left turns throughout the corridor are difficult to make due to the intensive roadside development, paucity of turning lanes or jughandles at most intersections, and congestion. The numerous driveways along US 30 have made mid-block left turns just as problematic as left turns at intersections. This has contributed to congestion, partly due to vehicles waiting to make a left turn blocking through traffic, as well as accidents throughout the corridor. As traffic volumes increase, motorists must wait longer for a break in oncoming traffic in order to make a left turn. Several municipalities have reported, and accident data supports, that many times vehicles traveling in the inner lane will encounter a stopped vehicle waiting to make a left turn and quickly swerve into the outer lane without properly checking for vehicles. This problem was generally more of an issue in the four-lane section of US 30, to the east of I-295. The wider shoulders and lower speed limit in the two lane section to the west of I-295 probably contribute to this being less of an issue in that section.

FIGURE 1: VEHICLE MAKING A MID-BLOCK LEFT TURN ALONG US 30
Magnolia Borough

Suggested Improvement Scenarios:
There are four basic strategies available for improving the ability to make left turns along US 30. However, the dense level of development along US 30 generally precludes two of the options listed below: widening the intersection to install center turn lanes and adding a dedicated jughandle. The remaining strategies, though, are applicable along most of US 30.

1. Center Left-Turn Lane - A separate lane dedicated to left turns is perhaps the most desirable option but also the most difficult to implement within the corridor. A center turn lane can be implemented several ways. The first, which is the most difficult given the level of development along US 30, is to widen intersections to create an additional lane to be used for turns. Another option is to restripe the existing cartway and carve a center turn lane out of the existing lanes. This is only a viable option when the existing lanes are sufficiently wide enough to carve out a center turn lane while maintaining lane widths of 11 feet or optimally, 12 feet. Finally, an existing through lane or parking lane can be converted to a center turn lane. This is usually the least desirable alternative because, in the case of converting a traffic lane, it will reduce the capacity of US 30. Implementation of this last option would require careful analysis to weigh the benefits of increased safety from improving the ability to make left turns against the decrease of capacity from the loss of a through lane.

2. Jughandles - Jughandles have been traditionally used to handle turning maneuvers at signalized intersections along major arterials in New Jersey. One major benefit of this method is that no turn phase needs to be programmed for traffic signals on US 30. Ideally, dedicated jughandles (either near side or far side/reverse) are utilized at an intersection to direct turning movements onto the intersecting street. This method requires a large portion of land at an intersection and would not be ideal for many locations along US 30 due to the level of development. Another option is utilizing local streets as jughandles. This is not appropriate for all intersections, however. Local streets may be residential or the local street network jughandle may be too long and/or circuitous. The latter option will require in-depth study before it is implemented taking into account impact on surrounding land uses and ease-of-use.

3. Left-Turn Traffic Signal Phase - A left turn signal phase can be implemented in both directions or only in one direction. If it is only implemented in one direction, the opposing direction will have a delayed green which will decrease the throughput capacity of the signal cycle in that direction. Alternatively, if one direction of traffic is heavier than the other, then the delayed green alternative will increase the capacity of the heavier direction compared to having a left turn signal phase in both directions. This is a relatively easy strategy to implement. Furthermore with the interconnected traffic signal system currently being installed along US 30, different signal timing patterns can be created for each intersection and timing can be changed to reflect current conditions along US 30.

4. Prohibit Left-Turns - Left turns can be prohibited by several methods including lane striping, signs, or a raised median and can be instituted at intersections, mid-block, or both at selected locations. This is the most drastic of the alternative strategies and will have a major impact on

businesses located along US 30. It should only be considered in areas with extreme safety issues.

OFF-SET INTERSECTIONS

Identified Problem:

Off-set intersections along US 30 are common, especially along sections of US 30 that serve as municipal boundaries, such as between Oaklyn Borough/Haddon Township and Somerdale/Stratford boroughs. Because through traffic on the intersecting streets must travel on US 30 for a short stretch, they usually require multiple cycles at signalized intersections.

Suggested Improvement Scenarios:

One way to increase the capacity of off-set legs at intersections is to restripe those legs to provide a two-lane approach where feasible. This would create a left turn lane and a right turn lane on the off-set street. This will in turn reduce the green time needed. Another option is to put loop detectors in the pavement of off-set legs. This will allow the traffic signals to respond to current conditions. If no cars are present on a leg, then no green time needs to be alotted for that leg. If only one or a few streets are offset, consider making the off-set legs one-way towards US 30. This approach is ideal for smaller volume roads that do not carry much through traffic and will not be suitable in an area like Oaklyn where virtually all streets are off-set at US 30.

Typically, each segment of the off-set street will have its own green phase. This contributes to congestion along the corridor by increasing the red phase length for each intersection approach. At some intersections, such as Vassar Avenue in Somerdale and Stratford boroughs, where the distance between off-sets is longer, through vehicles frequently get caught on US 30 in between the off-sets when the signal changes. They must then cross oncoming US 30 traffic to continue on the north-south street.

NUMEROUS CURB CUTS

Identified Problem:

Many smaller businesses line US 30, particularly in areas like Oaklyn and Audubon. Each business has it's own driveway and in some spots the driveway continuously fronts US 30 with no curb. This proliferation of curb cuts has a negative effect on pedestrian amenities by creating discontinuous sidewalks. Additionally, continuous driveways fronting US 30 establish a wide open area that creates a conflict between pedestrians and vehicles turning into a business. The numerous entry points onto US 30 also creates many more potential conflict points between vehicles entering and exiting US 30. This is especially problematic along the south side of US 30 in Oaklyn. Several stretches between Beechwood Avenue and Oakland Avenue are almost a single continuous driveway.

Suggested Improvement Scenarios:

Re-establishing a curb frontage with a single entry/exit point is the most efficient way to reduce

the number of continuous curb cuts in areas along US 30. Municipalities should reach out to businesses in the area for endorsement and seek funding from NJ DOT and grant sources. Many grants are available for downtown business district revitalization. A shared entry/egress with a common parking area, either in front or behind the businesses is another option. However, this is often difficult to achieve in a downtown business district due to space constraints and requires a strong commitment from the affected businesses.

PEDESTRIAN AND BICYCLE AMENITIES

Identified Problem:

Walking and biking are prevalent transportation modes in the corridor primarily due to the many businesses located along US 30 (particularly in the downtown business districts such as Oaklyn, Haddon, and Berlin), as well as the proximity of residential neighborhoods adjacent to US 30. In addition, the majority of school districts within the study area do not provide busing for school students. Therefore, students must walk to school, which in many cases, requires crossing US 30 or other major arterial roads. Crossing US 30 is difficult due to the amount of traffic, the lack of pedestrian amenities such as striped crosswalks, signs and pedestrian crossing signals. Figure 2 and 3 exemplify the lack of pedestrian amenities along many routes, in this case CR 673 which is a major pedestrian route to the PATCO and NJ Transit Lindenwold station. Other similar problems include narrow sidewalks adjacent to major roads. Berlin-Clementon Road (CR 534) and Clements Bridge Road (NJ 41) are two examples of this issue within the corridor.

Bicyling along US 30 is also difficult, particularly in the four-lane section to the east of I-295. Many sections do not have shoulders and cyclists must fequently travel in a traffic lane. Even in areas where lanes are sufficiently wide, such as Oaklyn, bicycling is difficult because of the lack of a striped shoulder and the numerous curb cuts. The compact commercial and retail development along US 30, particularly in the downtown business districts, in conjunction with the many nearby residential neighborhoods makes the corridor very conducive to bicycling and walking. Therefore, a top priority in the corridor should be the creation of amenities and facilities which encourage bicycling and walking.

Suggested Improvement Scenarios:

The following general recommendations were developed for the entire corridor and are intended to create a more inviting environment for bicyclists and pedestrians:

- Construct sidewalks where they currently do not exist making a particular effort to fill in existing gaps. Also, ensure adequate pedestrian crossing opportunities in transportation projects within the corridor such as the redesign of the Collingswood and Berlin Circles.

- Institute traffic calming techniques (such as raised crosswalks, medians, neckdowns, deflector islands, textured pavements) particularly in business districts, and around transit stations and schools. The appropriate technique(s) will vary depending upon the

FIGURE 2: DISCONTINUOUS SIDEWALK ALONG LAUREL ROAD (CR 673)
Stratford Borough

FIGURE 3: LACK OF SIDEWALK ALONG WHITE HORSE ROAD (CR 673)
Somerdale Borough/Lindenwold Borough

specific location. A good source of information on traffic calming measures is "Traffic Calming, Selected Practices, Lessons Learned" from the Rutgers University Center for Urban Policy Research.

- Install a system of navigational signage and "Share the Road" warning signs throughout the corridor on designated bike routes, per NJDOT guidelines.

- Preserve shoulders, where they exist, on US 30 and on major arterial roads and bridges in the corridor. Mark the shoulders as bike lanes where appropriate. Current NJ DOT design standards are 12 to14 feet and vary depending on traffic volume and land use.

- Upgrade or install modern bicycle parking facilities at transit stations, downtown business districts and regional attractions such as the Tweeter Center and Campbell's Field.

- Establish an extensive bicycle and pedestrian trail system throughout the corridor. Such trails should connect commercial, retail and other destinations to residential neighborhoods and existing paths. A top priority should be constructing the East Atlantic Bikeway the right-of-way adjacent and parallel to East Atlantic Avenue in the corridor. The proximity of this facility to US 30 will enhance its importance as a viable alternative to driving.

- Add bike lanes and install bicycle-safe storm grates during resurfacing of all major arterial routes within the corridor.

Recommendations developed for specific locations are:

- Extend both walkways on the Ben Franklin Bridge to the foot of the bridge.

- Construct the missing trail sections along the new park between Admiral Wilson Boulevard and the Cooper River. Missing segments include around the new gas station on the south side of the Boulevard and behind the Pub Restaurant on the Airport Circle connecting with the existing trail on Kaighn Avenue.

- Open the parking area at the new park on the south side of Admiral Wilson Boulevard.
- Create a westbound through-movement for bicycles on North Park Drive at US 30.

- Create a contra-flow bike lane on Garfield Avenue between Berlin Road and Gibbsboro Road in Clementon, to allow westbound travel from Clementon Amusement Park to East Atlantic Avenue.
- Create and implement a plan to improve bicycle and pedestrian access from Berlin and Atco to the NJ Transit Atlantic City Rail Line Atco station.

PAVEMENT RUTTING AND DRAINAGE

Identified Problem:

Rutted bituminous pavement frequently floods during heavy rainfalls and retain water which causes hydroplaning. The result is that either a lane is closed or traffic speed is significantly reduced. If an area is severely rutted vehicles must slow down and swerve to avoid rutted sections. Insufficient drainage and/or blocked culverts is the primary reason for flooding during heavy rainfalls. Several sections of rutting were noted during field views. Areas that are rutted and/or prone to flooding that were identified in field views include: the north side of US 30 (Admiral Wilson Boulevard) in Camden in the vicinity of milepost 2.25; the south side of US 30 in Oaklyn Borough in the vicinity of Holly and Greenwood Avenues; US 30 in both directions in the vicinity of Washington Avenue to Jefferson Avenue in Magnolia Borough; both sides of US 30 in the vicinity of Amherst and Pennsylvania Avenues and the north side of US 30 at Somerdale Road in Somerdale Borough; and both directions of US 30 in the vicinity of milepost 12.20 in Stratford Borough. There is currently a project in the region's Transportation Improvement Program to repave the section of US 30 between Oak Avenue and Jefferson Avenue (milepost 7.8 to 10) in Lawnside and Magnolia boroughs.

Suggested Improvement Scenarios:

Solving pavement rutting and drainage problems is rather straightforward: pave the roadway and install or improve the drainage system. However, this is a relatively expensive proposition and roads throughout the county and state must compete for a limited amount of funding. NJ DOT annually selects candidate projects for repaving and/or drainage improvements through a technical priority ranking procedure using NJ DOT's Pavement Management System. The selected paving projects then must receive the endorsement of the regional Metropolitan Planning Organization (DVRPC) in order to be placed on the Transportation Improvement Program for funding.

USE OF PARALLEL ROUTES TO AVOID US 30 CONGESTION

Identified Problem:

During periods when US 30 is congested, such as the morning and afternoon peak periods, many motorists are seeking alternative routes in order to avoid the congestion on US 30. As a result many parallel routes such as East and West Atlantic Avenue have become popular as alternative bypass routes to US 30. The problem is twofold. First, many of the alternative routes are now becoming congested (see Figure 4). Secondly, the alternative routes were not designed to handle large volumes of traffic and are generally not up to arterial standards, particularly in regards to design speed, traffic control and sight distance at intersections. Additionally, many of these alternate routes run through residential neighborhoods.

FIGURE 4: CONGESTION ON EASTBOUND EAST ATLANTIC AVENUE (CR 727) APPROACHING EVESHAM ROAD (CR 544)
Magnolia Borough

Suggested Improvement Scenarios:
Several techniques are available to discourage or prohibit use of parallel routes for drivers looking for shortcuts around congestion on US 30. The most straight-forward measure is to improve the flow of traffic along US 30. This measure will have the biggest impact on other routes by keeping traffic on US 30, which is intended to carry large volumes of through traffic. Other techniques include:

1. Prohibit Turns Onto Selected Roads During Peak Hours - Signs prohibiting turns, with the exception of local traffic, onto a parallel route during the morning and/or afternoon peak period can be installed rather easily. The larger issue is the enforcement of such a ban which can take up a lot of time and resources for a police department.

2. Install Traffic Control Devices On Parallel Routes - Stop signs and traffic signals force traffic to stop frequently which may make the alternative route less desirable. However, traffic control devices should only be installed if warranted by careful traffic pattern analysis. Sometimes stop signs create a phenomenon of speed spiking where motorists speed in the mid-block sections to try to make up for time lost at stop signs.

3. Institute Traffic Calming Measures - Center medians, bulb-outs at intersections, speed bumps and textured pavements and raised crosswalks are applicable traffic calming measures which can be instituted to slow traffic. Not all are appropriate for every road. For instance, bulb-outs are most appropriate in a business area, near schools or elderly housing. They are geared primarily towards decreasing the crossing distance for pedestrians but have the secondary benefit of slowing down traffic by making the roadway narrower. Center medians are not ideal for roadways where access to private driveways needs to be maintained.

4. Limit Access or Mobility on Parallel Routes - This approach can take several forms but the intent is to limit or prevent traffic from using a parallel route. Converting a two-way street to a one-way street is one means. However, that will most likely only solve the problem during either the morning or afternoon peak period, depending upon the primary commuter travel direction. The creation of cul-de-sacs, installation of forced turn islands or other barriers prevent all traffic from entering a roadway. They are usually used only for short, block-long segments where they have the effect of interrupting the flow of traffic on a detour route. Once motorists are forced off an alternate route they may not be inclined to take another detour in order to return to the alternate route. Since access to all properties must neither be denied or restricted by the barriers, it is imperative that property owners have another means of ingress and egress. Implementation of such measures should be carefully conceived so as to not simply shift traffic to another road that is equally unsuitable to handle a large volume of traffic.

HEAVY TRAFFIC ON NORTH-SOUTH ROUTES

Identified Problem:

The earliest roads in South Jersey radiated from Camden. In time these roads, such as US 30, NJ 38, NJ 70, and NJ 168 were developed and improved to become the major arterial facilities they are today. These roads are connected by a series of county roads which were and still are predominantly residential in nature but have had larger commercial and institutional uses added in later years. The result is that many of these north-south connector routes have seen an increase in traffic but have not added capacity through the years. Kings Highway (CR 551), NJ 41, Evesham Road (CR 544), Somerdale Road (CR 678), Laurel/White Horse Road (CR 673), and Gibbsboro Road (CR 686) all serve as cross-county connectors. Many of these roads also provide access to PATCO stations. All have been identified as congested, particularly during the peak periods.

Suggested Improvement Scenarios:

1. Reprogram Traffic Signals - If warranted by analysis of turning movement counts, increase the amount of green time allocated for north-south arterials at signalized intersections.

2. Intersection Widening - Selected widening at intersections will also allow more vehicles to flow through an intersection. However, due to the dense development along the US 30 corridor, this will not usually be an option without acquiring property.

3. Implement CMS Strategies - Since this is foremost a congestion problem, implementation of strategies identified in the Congestion Management System portion of this report should help reduce the number of single-occupant vehicles on the roadways. These strategies should have the biggest impact in reducing congestion along these routes. CMS strategies pertinent to the corridor are outlined on page 204.

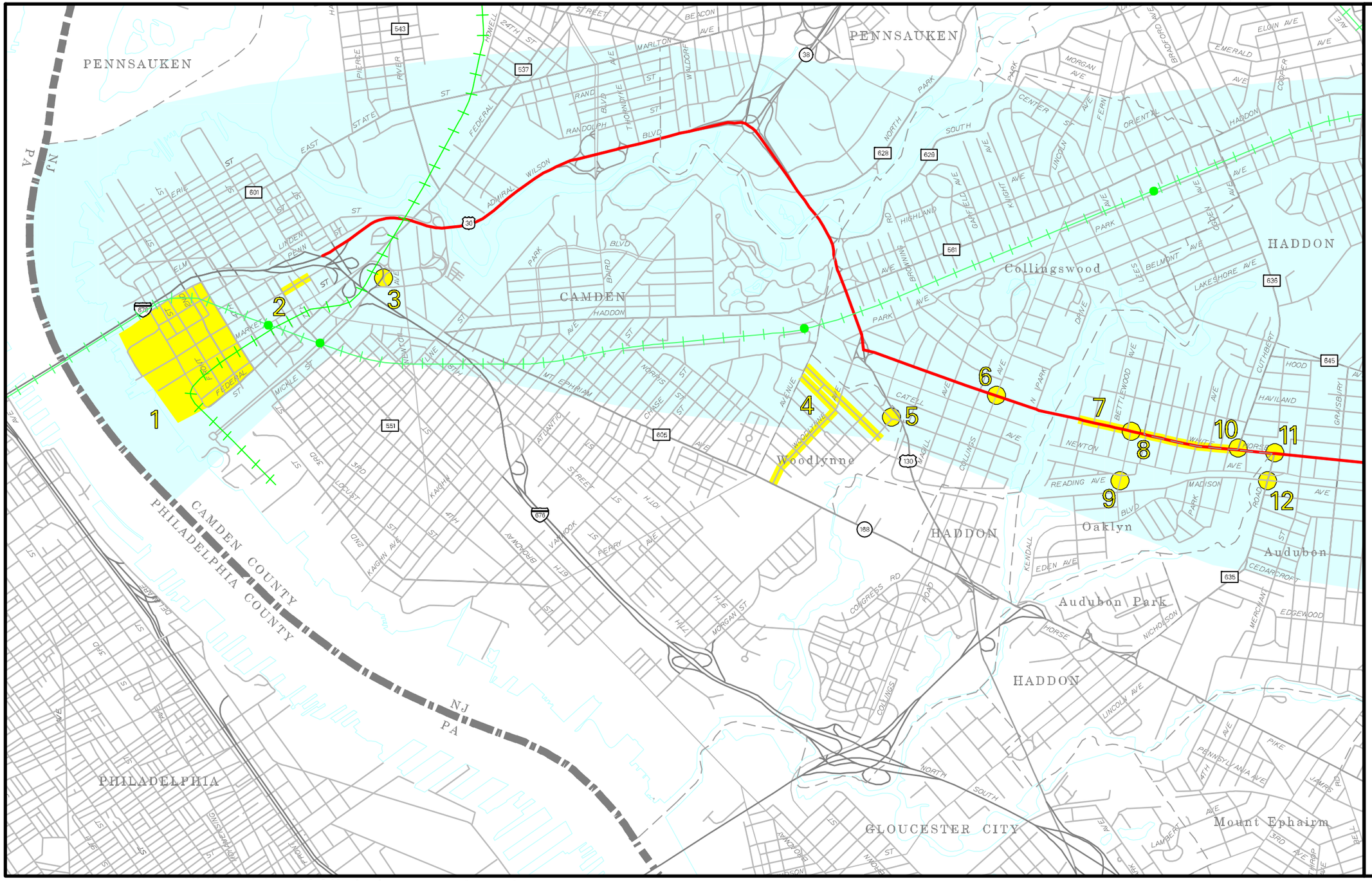
LOCATION-SPECIFIC TRANSPORTATION PROBLEMS AND POTENTIAL IMPROVEMENT SCENARIOS

This section of the report presents those locations within the corridor which have been identified using technical analysis and suggestions from the local municipalities as currently experiencing transportation problems, as critical to the mobility of people or goods throughout the corridor or as projected to have significant impacts to the transportation infrastructure because of proposed changes in a nearby land use (economic development pressures). There are 32 locations which have been identified within the 23 municipalities which make up this corridor. These locations are shown graphically on Maps 8a, 8b and 8c. A relatively detailed write-up of the identified problems and potential improvement scenarios for each location is presented.

Because of the nature of this planning document, specific detailed improvement recommendations are not provided. However potential improvement scenarios which in some cases represent a range of alternatives are presented. These scenarios have been considered in relation to their ability to solve existing or potential problems or deficiencies and are considered worthy of future action. 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.

At the onset of this effort, multi-agency field views were conducted to review potential locations for inclusion into the study. Participants included representatives from each of the local municipalities, staff from the Camden County Division of Planning, New Jersey Department of Transportation, the Delaware Valley Regional Planning Commission and the Cross County Connection TMA. During these preliminary field views, a base set of locations was identified for further review. DVRPC staff conducted subsequent follow-up field views to better define the existing conditions, observe the operating conditions, refine the problem identification and begin to formulate potential improvement scenarios. Each location was documented in terms of the above mentioned criteria. The information that follows for each location is a result of that process and recommends actions to be pursued based on cooperative discussions and input from each of the study participants.

The location descriptions are presented from a general west to east direction through the corridor and the numbering has no relation to project priority. An aerial photograph of each problem location is included in the report. Aerial photographs of problem locations that are located directly on or immediately adjacent to US 30 are contained in Section III Corridor Highway Facilities portion of this report on pages 51 to 97. All other problem location aerial photographs follow the problem description in this section of the report**.**



US 30 Corridor Study

Map 8a

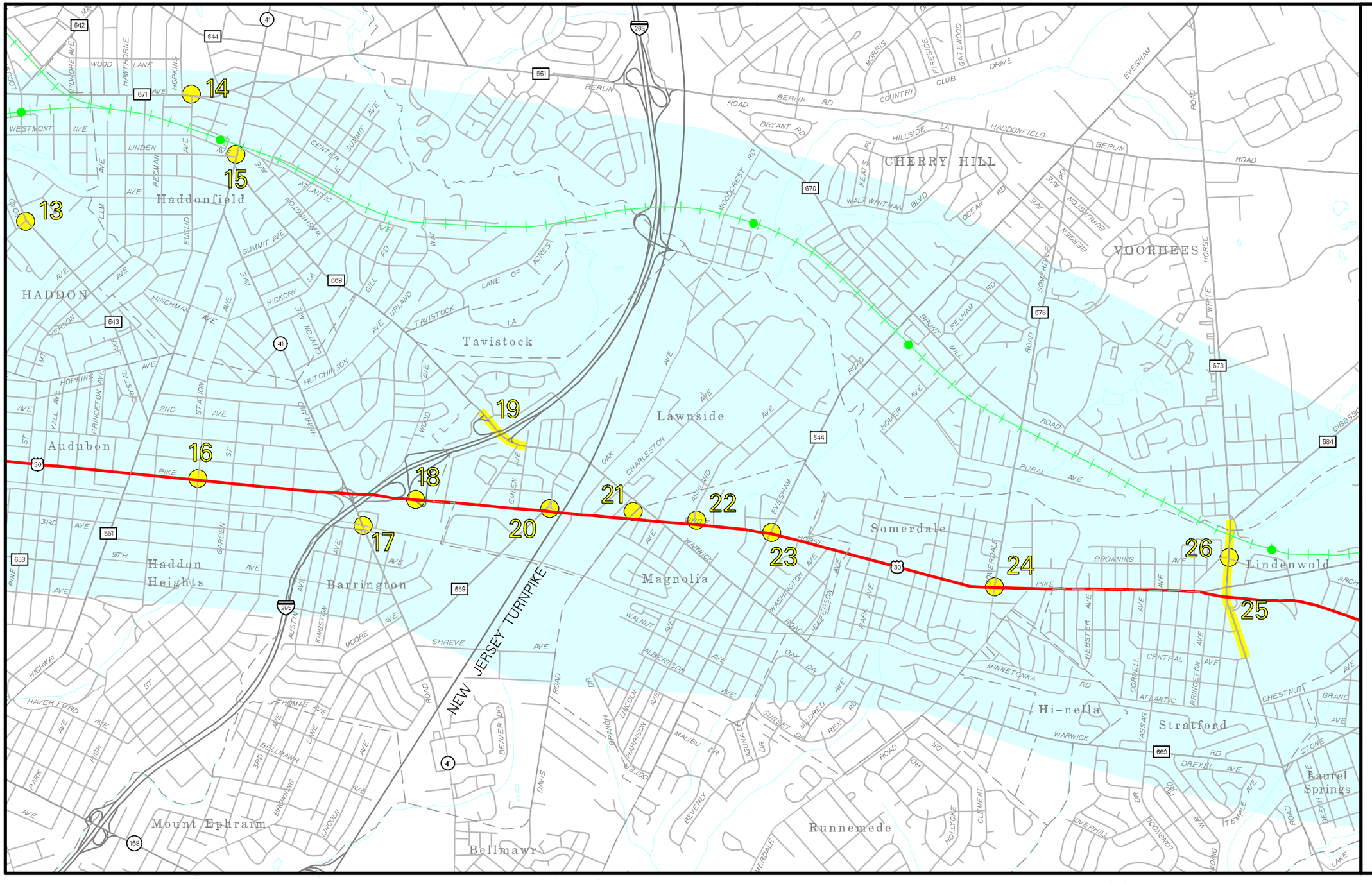
Transportation Problem Locations

Section A

Problem Location

0 0.5 1
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
July 2002



US 30 Corridor Study

Map 8b

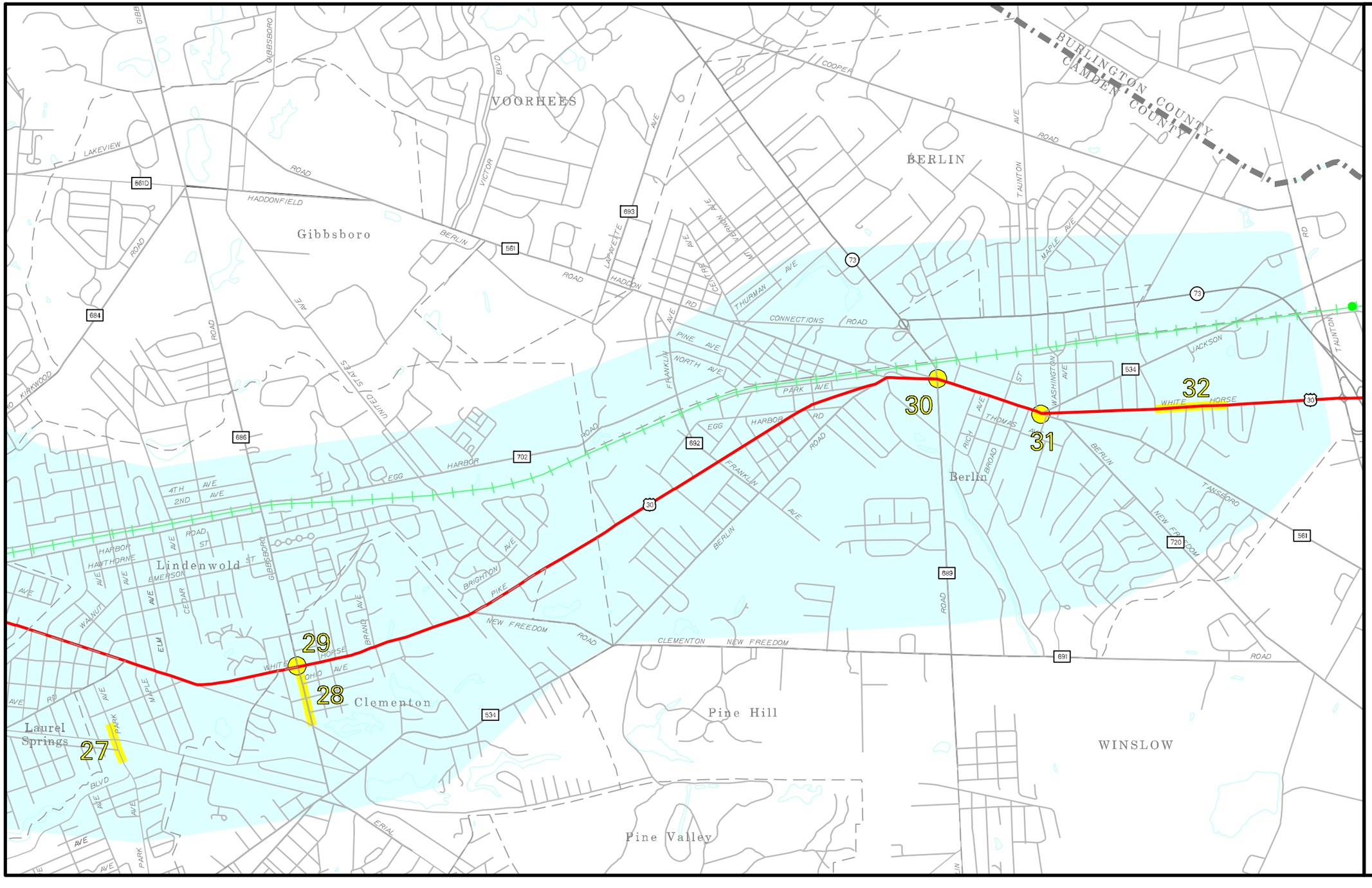
Transportation Problem Locations

Section B

Problem Location

0 0.5 1
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
July 2002



US 30 Corridor Study

Map 8c

Transportation Problem Locations

Section C

Problem Location

0 0.5 1
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
July 2002

1. CAMDEN WATERFRONT
City of Camden

Identified Problems:
There is severe non-recurring congestion in downtown Camden associated with events at the waterfront attractions, which include the Tweeter Center, the baseball stadium and to a lesser extent, the aquarium. Most attendees arrive via I-676 and traffic congestion is particularly severe on east-west running streets, including Martin Luther King Boulevard, Federal Street, Market Street and Cooper Street between the waterfront and I-676 prior to and after events. The congestion is exacerbated when events are held simultaneously. Camden has invested heavily in the waterfront attractions to bring people into the city and bolster the city's economy. However, the congestion associated with these venues has had a negative impact on the quality of life in surrounding neighborhoods by hampering residents from accessing their homes during scheduled events. It also increases the response time for emergency vehicles.

Recommended Strategies:
A detailed study should be undertaken to effectively address the congestion associated with events. Preliminary plans have been discussed for building additional roads and creating a loop route around the waterfront attractions. This is just one alternative that should be analyzed in a detailed study.

0 0.05 0.1 0.2 0.3 0.4 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 25:

Camden Waterfront

2. COOPER STREET FROM BROADWAY (CR 551) TO 8TH STREET
City of Camden
Refer to Aerial Photograph 1 on Page 51

Identified Problems:
Cooper Street is two lanes by direction at this location. There is also an additional parking/drop-off lane in both directions between Broadway and 7th Street. The eastbound Cooper Street approach to 7th Street is striped for a shared left turn/through lane, a through lane and a shared through/right turn lane. Field views indicate that a traffic signal is being installed at Cooper Street and 7th Street. 7th Street dead ends at Cooper Street and the Leap Academy Charter School is located on the north side of this intersection. The portion of 7th Street on the north side of Cooper Street has been closed and incorporated into the school property behind a fence. Cars are frequently double parked on Cooper Street to drop off and pick up children. The children must cross multiple lanes of Cooper Street, dodging in-between parked and moving vehicles.

Between 7th and 8th Streets there are no lane or median striping on Cooper Street, which is 70 feet wide. The lanes were previously marked but the paint has worn off. The lack of directional lane markings make the intersection confusing to negotiate given the potential for left, right and through movements at this location. After the traffic signal at 8th Street, traffic on Cooper Street tends to pick up speed as it approaches the eastbound US 30 on-ramp. Also, there is no sign to inform motorists of the delayed green on southbound 8th Street at Cooper Street. Many motorists are unaware of the delayed green and start moving when they see oncoming vehicles move.

Recommended Strategies:

The school's proximity to the 8th Street bridge over the Ben Franklin Bridge toll plaza and the US 30 on-ramp, both of which carry high-speed traffic, accentuate the need to create a safe drop-off and pick-up area for students. Ideally, a separate off-street area should be created for these activities. There is a vacant lot to the east of the school property which can be accessed from the abandoned section of 7th Street which has already been incorporated into the school property. This and other alternatives should be explored for a designated drop-off and pick-up location on, or adjacent to, school property.

A median and designated lanes should be striped on Cooper Street between 7th and 8th Streets. A sign informing motorists of the delayed green signal phase for southbound 8th Street should be added to the signal mast. A pedestrian phase should be included and children should be directed to cross at the new traffic signal being installed at Cooper Street and 7th Street.

FIGURE 5: COOPER STREET LOOKING EAST TOWARD 7TH STREET AND 8TH STREET
Camden City

3. 10TH STREET IN THE VICINITY OF NEWTON STREET
City of Camden
Refer to Aerial Photograph 2 on Page 53

Identified Problems:
Martin Luther King Boulevard separates in the vicinity of the I-676 overpass into 10th Street which carries eastbound traffic and 11th Street which carries westbound traffic. The northbound I-676 off-ramp intersects both 10th Street and 11th Street. The off-ramp intersection with 11th Street is traffic-signal controlled. A short distance later, the off-ramp merges with 10th Street. The merge is angled and there is some confusion as to which direction is supposed to yield. Several accidents have occurred at this junction. The I-676 off-ramp is congested, particularly during peak periods. Additionally, mobility is made difficult by the one-way streets and lack of directional signage. Motorists bound for the waterfront attractions and using the northbound I-676 off-ramp must merge with 10th Street traffic, travel on 10th Street, then loop around to 11th Street in order to access westbound Martin Luther King Boulevard. Besides being long, this routing is confusing. The pavement is in poor condition in several spots in this area.

Recommended Strategies:
If Martin Luther King Boulevard split into eastbound (10th Street) and westbound (11th Street) directions at the existing traffic signal at 11th Street and I-676 off-ramp, eastbound Martin Luther King Boulevard traffic would merge with the I-676 off-ramp at a signalized intersection. This would eliminate the current, confusing yield controlled merge. The new intersection would have to be properly channelized and signed to insure that all eastbound traffic turns right at the intersection. Installing directional signs would help motorists get around this area and help eliminate some of the confusion regarding the one-way routing.

4. WOODLYNNE AVENUE, ELM AVENUE AND EVERGREEN AVENUE
Woodlynne Borough

Identified Problems:
Motorists are driving through residential neighborhoods in Woodlynne to avoid traffic congestion at the Collingswood Circle and US 130. Elm Avenue and Evergreen Avenue function as a one-way pair and are used by motorists traveling on northbound US 130 wishing to avoid the Collingswood Circle. Elm Avenue carries northbound traffic and Evergreen Avenue carries southbound traffic through residential neighborhoods. In the morning, motorists on northbound US 130 are taking northbound NJ 168, turning right onto Woodlynne Avenue and then taking Elm Avenue to access the Ferry Avenue PATCO Station. In the afternoon, they are taking Evergreen Avenue to either Sloan Avenue or 4th and Laurel Avenue to access southbound US 130. According to local authorities, motorists frequently disobey the stop signs on Elm Avenue and Evergreen Avenue and travel at speeds exceeding the posted speed limit. This trend has created an unsafe atmosphere for residents and pedestrians.

Recommended Strategies:
Turns from NJ 168 onto Woodlynne Avenue and from Ferry Avenue onto Evergreen Avenue should be prohibited during the peak morning and afternoon periods, respectively. Motorists wishing to avoid the Collingswood Circle will still be able to use NJ 168 and Ferry Avenue to access the PATCO station, but will be prohibited from residential neighborhoods. In the long term, the Collingswood Circle elimination project should reduce congestion and improve safety for northbound US 130 motorists.

5. US 130 (CRESCENT BOULEVARD) AT LAUREL AVENUE
Woodlynne Borough
Milepost 29.09

Identified Problems:
Laurel Avenue is a residential street that becomes an on-ramp to southbound US 130. US 130 is a median divided, three lanes-by-direction facility in this vicinity. There is inadequate sight distance on Laurel Avenue at southbound US 130. This is an angled intersection compounded by a horizontal curve on southbound US 130 to the north of the intersection which prevents a sufficient view of oncoming southbound US 130 traffic for motorists on Laurel Avenue. A used car lot on the north side of Laurel Avenue at this location also hinders sight distance. This insufficient sight distance is compounded by the high speed of traffic on this stretch of US 130.

Recommended Strategies:
Their is a large vacant grassy parcel on the south side of Laurel Avenue where it meets southbound US 130. An acceleration lane could be carved out of this parcel which should help drivers better accelerate onto US 130. The stop sign on Laurel Avenue should be maintained though, to enhance safety at this location.

0 0.025 0.05 0.1 0.15 0.2 Miles

Ferry Ave. Station (parking lot)

Collingswood Circle

4

CAMDEN CITY

Evergreen Ave.

Elm Ave.

30

130

COLLINGSWOOD BOROUGH

Laurel Ave.

Harrison Ave.

WOODLYNNE BOROUGH

5

Ferry Ave. (CR603)

Woodlynne Ave.

3rd Ave.

4th Ave.

Sloan Ave.

Magill Ave.

NJ 168

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

N

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 26:

Woodlynne Borough

6. US 30 AT COLLINGS AVENUE (CR 630)
Collingswood Borough
Milepost 4.87
Refer to Aerial Photograph 6 on Page 61

Identified Problems:
Collings Avenue is the main connector route between Collingswood's downtown business district along Haddon Avenue and NJ 168 which leads to the Walt Whitman Bridge. At US 30, Collings Avenue is one-lane by direction. The intersection is widened to include a left turn lane in both directions of Collings Avenue but there is no protected left turn signal phase. Traffic in both directions on Collings Avenue has a difficult time making left turns onto US 30. There is a large apartment complex and a small retail strip center at this intersection which generate many trips.

Recommended Strategies:
Analyze turning movements and investigate the prospect of programming a protected left turn phase for the Collings Avenue approaches to US 30. Based on the outcome of turning movement counts, the dedicated turn phase can perhaps be limited to the peak periods.

7. US 30 FROM LAKEVIEW AVENUE TO CUTHBERT BOULEVARD (CR 636)

Oaklyn Borough and Haddon Township
Milepost 5.18 to 6.08
Refer to Aerial Photograph 7 on Page 63

Identified Problems:

There is one lane by direction along this stretch of US 30. Each lane is 20 feet wide and there are no shoulder or lane markings on this segment of US 30. Parking is permitted on the north side but on the south side parking is only permitted between Park Avenue and Cedar Avenue in front of a car dealership. This is the only stretch of US 30 within the study area which does not have clearly demarcated lanes. This creates confusion among the motoring public who mistakenly assume there are two lanes and try to pass other vehicles. This also encourages speeding because it creates the perception of a wide, open road. The south side of US 30 (Oaklyn) has more suburban-variety, setback development with parking in front of the building while on the north side (Haddon), it is predominantly store front retail development with on-street parking. The south side has several sections of continuous driveway which also serves as the sidewalk. This creates a very unpleasant atmosphere for pedestrians.

Recommended Strategies:

An eight foot shoulder should be striped along the south side of this section of US 30, primarily as a traffic calming measure. A center left turn lane can be striped at intersections in lieu of a shoulder. This will help keep turning vehicles from blocking through movements. Signing should also be updated to clarify where parking is permitted and where it is not. Driveways should be consolidated or where appropriate, closed, along the south side of US 30 in Oaklyn. Shared driveways between businesses should also be encouraged as a way to create a more continuous sidewalk with less pedestrian and automobile conflicts.

FIGURE 6: US 30 LOOKING EAST IN OAKLYN
Oaklyn Borough

8. US 30 AT EAST HADDON AVENUE/CLINTON AVENUE
Oaklyn Borough and Haddon Township
Milepost 5.44
Refer to Aerial Photograph 7 on Page 63

Identified Problems:
This is an off-set intersection with East Haddon Avenue on the north side of US 30 and Clinton Avenue on the south side of US 30. Both streets are one lane by direction and the intersection is signalized. As with most off-set intersections along the US 30 corridor, three traffic signal cycles are required (one each for US 30, East Haddon Avenue and Clinton Avenue) at this intersection. Off-set intersections are addressed as a corridor-wide issue in the Corridor-Wide Transportation Problems and Potential Improvement Scenarios section of this report. However, this intersection was singled out because Clinton Avenue is the only north-south street in Oaklyn that crosses the rail road tracks. The primary problem at this intersection is that traffic does not clear out of Clinton Avenue or East Haddon Avenue within the green cycle during peak periods. Currently only about three cars can get through the intersection per cycle which causes a back-up on East Haddon Avenue and Clinton Avenue.

Recommended Strategies:
Currently, there are no designated turn lanes on the northbound Clinton Avenue approach. Vehicles waiting to turn right onto eastbound US 30 frequently can not approach the intersection to make a right turn on red movement because of the left turn queue. Clinton Avenue is 36 feet wide at the intersection which is sufficiently wide to stripe a right turn lane and a left turn lane at the intersection. Through movements onto East Haddon Avenue would need to use the left turn lane since they must enter westbound US 30 for a short stretch due to the off-set nature of

the intersection. Unfortunately, East Haddon Avenue is only 25 feet wide which is not wide enough to stripe separate turn lanes. Additionally, the signal timing should be analyzed to determine if more green time is warranted for East Haddon Avenue/Clinton Avenue without disrupting the flow on US 30.

9. CLINTON AVENUE AT RAILROAD UNDERPASS
Oaklyn Borough
Refer to Aerial Photograph 7 on Page 63

Identified Problems:
There is a drainage problem during heavy rainfalls on Clinton Avenue in the vicinity of the railroad bridge underpass. This location floods frequently and closes Clinton Avenue at the underpass. A large volume of water flows to this location because it is the lowest spot in town and also because water from other streets is diverted here. Clinton Avenue is the only street in Oaklyn that traverses the railroad tracks. Every other town along US 30 in the study area has at least two railroad crossings. When Clinton Avenue floods, emergency vehicles must cross the tracks through/via another town. The closest detour routes are Collings Avenue to the west and Nicholson Road to the east. Both routes are circuitous and contribute to an increased response time for emergency vehicles. The county installed new culverts in the vicinity of the railroad bridge about a year ago as part of a drainage improvement project. However, the area still experiences flooding, even though it clears out much quicker than before.

Recommended Strategies:
In the short term the drainage and culvert system should be reviewed to determine if drainage can be improved in this area. Oaklyn has made some inquiries into opening an existing, unofficial railroad crossing at West Oakland Avenue but have been told by the railroad that they are not interested in creating additional crossings. West Oakland Avenue is fully paved across the railroad tracks but the crossing is secured by a gated fence and is only opened for emergency vehicles. However, it is infrequently used by emergency vehicles due to the logistics involved in opening the crossing. Permanently opening West Oakland Avenue across the railroad tracks is a

longer term solution that will also help alleviate other problem locations in this vicinity, including the sight distance problem at West Atlantic Avenue/Manor Avenue and Nicholson Road described in Problem 12 below.

FIGURE 7: LOOKING NORTH ON WEST OAKLAND AVENUE TOWARD RAILROAD TRACKS
Oaklyn Borough

10. US 30 AT CUTHBERT BOULEVARD (CR 636)
Haddon Township, Audubon Borough and Oaklyn Borough
Milepost 5.92
Refer to Aerial Photograph 8 on Page 65

Identified Problems:
Cuthbert Boulevard is the primary route for residents in Haddon Township, Oaklyn and Audubon to travel between US 30 and routes NJ 38 and NJ 70 to the north. Cuthbert Boulevard ends at US 30 and is one lane by direction with a cartway of 30 feet. There is development abutting both sides of Cuthbert Boulevard at US 30. Vehicles backup on the southbound Cuthbert Boulevard approach to US 30 because the intersection approach is not widened and is not able to handle the high volume of traffic and turning movements. Additionally, the turning radius is tight at the intersection.

Recommended Strategies:
This is a narrow intersection with hemmed-in development on both sides of Cuthbert Boulevard. However, there appears to be some land available in the northeast quadrant of the intersection adjacent to a car service business which could be used to create an additional lane on Cuthbert Boulevard that would extend from the US 30 intersection for approximately 150 feet. Cuthbert Boulevard could be reconfigured for a southbound right turn lane, a southbound left turn lane and a northbound lane at the intersection. A detailed analysis of this alternative is recommended.

FIGURE 8: LOOKING NORTH ON CUTHBERT BOULEVARD (CR 636) FROM US 30 INTERSECTION
Oaklyn Borough/Haddon Township/Audubon Borough

11. US 30 AT NICHOLSON ROAD (CR 635)
Audubon Borough
Milepost 6.08
Refer to Aerial Photograph 8 on Page 65

Identified Problems:
Nicholson Road is a one lane-by-direction road which runs between US 30 and Broadway (CR 551). There is about a 30 to 40 foot gully in the southwest quadrant of the US 30 and Nicholson Road intersection and the guardrail on the west side of Nicholson Road appears to be insufficient. The intersection is signalized and there is a left turn signal phase from westbound US 30 to southbound Nicholson Road but there is no dedicated left turn lane for this movement. Both directions of US 30 are 20 feet wide and there is a dedicated right turn lane for the eastbound approach to Nicholson Road. Beginning at Nicholson Road, a seven foot shoulder is striped on eastbound US 30.

Recommended Strategies:
The guard rail should be extended up to US 30 and, if not already so, brought up to current design standards to improve safety. A left turn lane should be striped on westbound US 30 at this location. This can be accommodated by striping an 11 foot wide through lane and an 11 foot wide left turn lane on westbound US 30. The median stripe would then need to be shifted two feet which would decrease the eastbound cartway from 20 to 18 feet. This would, in turn, decrease the eastbound shoulder to five feet.

12. NICHOLSON ROAD (CR 635) AT MANOR AVENUE/WEST ATLANTIC AVENUE (CR 744)
Audubon Borough
Refer to Aerial Photograph 8 on Page 65

Identified Problems:
Southbound Nicholson Road passes under two adjacent bridge structures which carry Newton (in Oaklyn)/East Atlantic Avenue (in Audubon Borough) and a freight rail line. Approximately 35 feet after the rail bridge Nicholson Road intersects Manor (in Oaklyn)/West Atlantic Avenue (in Audubon Borough) at grade. The Newton/East Atlantic Avenue and railroad overpasses prevent adequate sight distance at this location for drivers on both Manor/West Atlantic Avenue and Nicholson Road. According to local officials, several accidents have occurred at this location. Compounding the sight distance problem, Nicholson Road shifts to the west on the south side of the adjacent bridges. The eastbound Manor Avenue approach to Nicholson Road is striped to only allow right turns onto southbound Nicholson Road. However, cars routinely cross Nicholson Road or make left turns onto northbound Nicholson Road. Convex mirrors have been placed at the intersection to improve sight distance for drivers on eastbound Manor Avenue but are not very clear, particularly due to the inherent darkness created by the bridges, and have been frequently vandalized. The westbound West Atlantic Avenue approach permits all movements.

Recommended Strategies:
The optimal long term solution would be to replace the railroad and Newton/East Atlantic Avenue overpasses with new, wider structures. An immediate short term strategy would be improved signing that provides a more conspicuous warning of the blind intersection with Manor/West Atlantic Avenue for drivers on southbound Nicholson Road. There currently are

several small signs informing motorists of the low bridge clearance, reduced speed, and limited sight distance but they are not very prominent and the messages tend to blend together. A flashing warning sign, better lighting and/or grooved pavement approaching the intersection would improve the situation.

Another option would be a one-way, westbound routing of Manor Avenue which would eliminate the more hazardous eastbound Manor Avenue approach to Nicholson Road. Newton Avenue could continue to carry two-way traffic. In order to route traffic one-way westbound on Manor Avenue, West Oakland Avenue in Oaklyn would have to be opened across the railroad tracks in order to give motorists the opportunity to move between Manor Avenue and Newton Avenue (see problem 9 above). Currently, West Clinton Avenue is the first opportunity that motorists have to cross the railroad tracks.

FIGURE 9: NICHOLSON ROAD (CR 635) LOOKING NORTH TOWARD MANOR/WEST ATLANTIC AVENUE
Audubon Borough

13. CRYSTAL LAKE AVENUE (CR 643) AT MACARTHUR BOULEVARD
Haddon Township

Identified Problems:
Crystal Lake Avenue has a very narrow cartway and when events are held on the fields or school lets out, the Crystal Lake Avenue and MacArthur Boulevard intersection becomes congested. Traffic on northbound Crystal Lake Avenue backs up because vehicles have a difficult time making left turns onto MacArthur Boulevard. Crystal Lake Avenue is one lane-by-direction and there is no left turn lane or dedicated left turn signal phase at MacArthur Boulevard. MacArthur Boulevard is 30 feet wide in this vicinity. The township has investigated a one-way loop route in this vicinity (northbound Crystal Lake to westbound MacArthur to southbound Rhoades to eastbound Valley Drive). However, this would not eliminate the congestion associated with left turns from Crystal Lake Avenue to MacArthur Boulevard.

Pedestrian safety is another issue at this location. Crystal Lake Avenue has heavy pedestrian traffic in the vicinity of MacArthur Boulevard. This is due to the close proximity of several significant pedestrian trip generators (Crystal Lake Avenue athletic fields, a senior housing complex, a shopping center, Crystal Lake Pool, PATCO, Haddon Hills apartment complex and Van Sciver Elementary School). According to the Haddon Township Police Department, traffic on Crystal Lake Avenue often exceeds the posted speed limit. The combination of excessive speeds and the lack of appropriate pedestrian amenities makes Crystal Lake Avenue uninviting for pedestrians.

Recommended Strategies:

There appears to be sufficient right-of-way at this intersection to facilitate widening of the intersection to permit a left turn lane on the northbound Crystal Lake Avenue approach to MacArthur Boulevard. The intersection of Crystal Lake Avenue and MacArthur Boulevard should be widened to accommodate a left turn lane on Crystal lake Avenue. To accommodate this, the sidewalk on the west side of Crystal Lake Avenue, abutting the shopping center, will have to be relocated closer to the shopping center parking lot. Traffic calming measures, such as raised or textured crosswalks, should also be instituted along this stretch of Crystal Lake Avenue to improve pedestrian safety.

0 0.025 0.05 0.1 0.15 0.2 Miles

Rec. Complex (Pool)

Park Blvd. (CR 641)

Crystal Lake Ave. (CR 643)

Apartment Complex

Athletic Fields

HADDONFIELD BOROUGH

HADDON TOWNSHIP

13

MacArthur Blvd.

Shopping Center

Haddon Township High School

Rhoads Ave.

Valley Drive

Van Sciver Elementary

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2002

US 30 CORRIDOR STUDY
Camden County, New Jersey

6 Problem location

Municipal boundary

AERIAL PHOTOGRAPH 27:

Crystal Lake (CR643) and MacArthur Boulevard

14. HADDON AVENUE (CR 561) AT EUCLID AVENUE AND TANNER STREET
Haddonfield Borough

Identified Problems:
Left turns from westbound Haddon Avenue to southbound Euclid Avenue are difficult to make and contributes to traffic stacking up on Haddon Avenue. There is no protected left turn signal phase for this movement.

Recommended Strategies:
A turning movement count should be performed at this location. If warranted, a protected left turn signal phase should be added for the westbound Haddon Avenue approach to the intersection.

15. KINGS HIGHWAY (NJ 41) AT PATCO STATION DRIVE
Haddonfield Borough

Identified Problems:
During peak periods it is difficult to make a left turn from the PATCO station drive onto northbound Kings Highway. It is also difficult to make a left turn from northbound Kings Highway to PATCO station drive. Haddonfield has considered converting the off-set street across Kings Highway (Washington Avenue) to a one-way street in order to lessen the number of cars at the intersection and improve the chance of making left hand turns from the drive. However, the Borough has not pursued this further due to questions of which way to route traffic as well as access and mobility concerns of a one-way routing.

Recommended Strategies:
A traffic signal warrant should be performed to determine if a traffic signal is justified at this intersection. If so, the traffic signal should be coordinated with the adjacent signals at Warwick Road and Tanner Street.

DELAWARE VALLEY
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US 30 CORRIDOR STUDY
Camden County, New Jersey

6 Problem Location
Municipal Boundary

AERIAL PHOTOGRAPH 28:
Haddonfield Business District

16. US 30 AT STATION AVENUE (CR 656)
Haddon Heights Borough
Milepost 7.27
Refer to Aerial Photograph 9 on Page 67

Identified Problems:
Left turn lanes are provided in both direction on US 30, although a protected left turn signal phase is only provided on westbound US 30 to southbound Station Avenue. Left turn lanes are also provided on Station Avenue in both directions, although neither is given a protected left turn signal phase. Station Avenue backs up in both directions at US 30 during peak periods. Additionally, the stream of oncoming and turning vehicles obstruct the view of motorists in the opposing direction making it difficult to detect openings and make left turns.

Recommended Strategies:
A detailed turning movement analysis should be conducted to determine if a left turn signal phase should be added to the eastbound US 30 approach and/or both approaches on Station Avenue.

17. CLEMENTS BRIDGE ROAD (NJ 41) AND EAST ATLANTIC AVENUE (CR 727)
Barrington Borough
Refer to Aerial Photograph 10 on Page 69

Identified Problems:
East Atlantic Avenue is frequently used as an alternate parallel route to US 30, particularly during times when US 30 is congested. Clements Bridge Road frequently has a continuous volume of traffic in both directions which makes it difficult for vehicles on East Atlantic Avenue to enter or cross. Field views have indicated vehicles on East Atlantic Avenue waiting up to five minutes for a break in traffic in order to turn onto or cross Clements Bridge Road. This results in severe back-ups on East Atlantic Avenue.

Recommended Strategies:
A traffic signal warrant should be performed at this intersection to determine if traffic volumes or accident statistics dictate a new traffic signal at this location.

18. US 30 IN THE VICINITY OF COPLEY ROAD (CR 666) AND BELL AVENUE
Barrington Borough
Milepost 8.16 to 8.23
Refer to Aerial Photograph 11 on Page 71

Identified Problems:
The northbound I-295 on and off ramps and the I-295 southbound on-ramp connect with Copley Road at the US 30 interchange. Copley Road connects US 30 and Warwick Road (CR 669). There is a channelized left turn lane from eastbound US 30 to Copley Road that can hold about eight vehicles. The Copley Road and US 30 intersection is signalized and there is a left turn signal phase from eastbound US 30 to Copley Road. During peak periods the left turn lane fills beyond capacity and blocks the innermost lane on eastbound US 30.

There is a near side jughandle at Bell Avenue for eastbound US 30 traffic that is primarily used to make U-turns to westbound US 30. During peak periods there are occasionally capacity problems with the Bell Avenue jughandle and jughandle traffic spills back onto eastbound US 30.

Recommended Strategies:
There seems to be enough room to lengthen the center left turn lane as far west as the I-295 overpass and still remain within the existing right-of-way. Space for the widening would have to be taken from the eastbound US 30 shoulder and all lanes shifted to the south in order to extend the center left turn lane. This should significantly increase the capacity of the queue. The channelization should be updated as part of this effort. The signal timing at this intersection should also be analyzed to determine if more green time should be allocated to the eastbound US

30 left turn movement.

There is a continuous defacto third lane on eastbound US 30 from the point where the northbound I-295 off-ramp joins eastbound US 30 to the Bell Avenue jughandle entrance. This lane, however, is not striped. This lane should be striped from the I-295 off-ramp to the Bell Avenue jughandle and can serve the overflow capacity from the jughandle.

19. WARWICK ROAD (CR 669) IN THE VICINITY OF I-295
Lawnside Borough

Identified Problems:
The cartway of Warwick Road is 46 feet wide but only striped for one lane in each direction at this location. Due to the wide nature of the road and the I-295 ramps, traffic on Warwick Road regularly exceeds the 25 mph posted speed limit according to local officials. There is also a horizontal and vertical sight distance problem due to a curve in Warwick Road and the I-295 overpass respectively. Mouldy Road is one lane by direction and connects US 30 and Warwick Road. Cars on northbound Mouldy Road must cross two wide lanes of traffic on Warwick Road to access the I-295 on-ramp. This is a dog-leg maneuver and vehicles must travel on Warwick Road for a short period before entering the on-ramp. Additionally, students must cross the I-295 on-ramp while walking southbound on Warwick Road.

Recommended Strategies:
Shoulders on Warwick Road should be diagonally striped to create a perception of narrower lanes which will encourage lower speeds. Additionally, a traffic signal warrant analysis should be performed to determine if traffic volumes, accident statistics or other measures indicate a need to install a traffic control device at Warwick Road and Mouldy Road. Improved pedestrian amenities should be installed along this section of Warwick Road, including better crosswalk striping at intersections, warning signs to alert motorists of pedestrians and flashing pedestrian signals.

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
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US 30 CORRIDOR STUDY
Camden County, New Jersey

6 Problem Location
Municipal Boundary

AERIAL PHOTOGRAPH 29:
Warwick Road (CR669)
in the Vicinity of I-295

20. US 30 AT GLOUCESTER ROAD/PIKE (CR 659)
Lawnside Borough
Milepost 8.73
Refer to Aerial Photograph 11 on Page 71

Identified Problems:
Gloucester Pike is designated as County Route 659 on the south side of US 30. On the north side of US 30 it is a local road and called Gloucester Road. The westbound US 30 nearside jughandle is very short in length and begins just after passing under the New Jersey Turnpike overpass. Vehicles in the jughandle have a difficult time entering the queue on southbound Gloucester Road and traffic backs up on the jughandle onto westbound US 30. Additionally the traffic signal at this intersection does not have a protected left turn phase for any movement on either US 30 or Gloucester Pike/Road. Gloucester Pike was recently widened by the county to two lanes-by-direction but it drops from two lanes to one lane-by-direction 160 feet before the US 30 intersection. The turning radius from eastbound US 30 to southbound Gloucester Pike is tight and during several field views tractor trailers were witnessed jumping the curb at this location.

Recommended Strategies:
The intersection should be widened to accommodate two approach lanes on southbound Gloucester Road. A left turn lane and a shared right turn/through lane will increase the capacity of southbound Gloucester Road. There appears to be enough room to widen Gloucester Road for at least 160 feet back from the US 30 intersection without taking any land from adjoining property. In conjunction with widening the intersection, the near-side jughandle should be moved to intersect at a point 60 feet further north on Gloucester Road. Moving the jughandle further north on Gloucester Road and the additional capacity gained by providing

two approach lanes should help relieve the back-ups on the jughandle.

Additionally, the turning radius in the southwest quadrant should be enlarged. The lane drop on Gloucester Pike does not seem to pose any problems at this time, but the county may wish to widen the remaining portion between the recent improvements and US 30 in the future. The cartway on the southbound Gloucester Pike departure lane is currently sufficiently wide to stripe two 12 foot lanes. However, the northbound approach lanes needs to be physically widened in order to carry two lanes. Upgraded pedestrian amenities at the intersection should be included as part of any improvement plan for this location.

21. US 30 AT DAVIS ROAD/CHARMAN AVENUE
Magnolia Borough and Lawnside Borough
Milepost 9.08
Refer to Aerial Photograph 12 on Page 73

Identified Problems:
Davis Road and Charman Avenue form an offset, signalized intersection at US 30. Davis Road is on the south side of US 30 and Charman Avenue is on the north side. Davis Road provides access to a new home improvement warehouse store on the south side of US 30. There is a motor boat dealership on the east side of the US 30 and Charman Avenue intersection. On several field views, motor boats and trailers were being stored on Charman Avenue. The boats and trailers decrease the sight distance for motorists on westbound US 30 turning onto Charman Avenue. It also forces them into the oncoming lane of traffic on Charman Avenue. There is no protected left turn signal phase in either direction of US 30 at this intersection.

Recommended Strategies:
The storage of boat trailers on Charman Avenue should be banned and enforced. Since this is an off-set intersection, left-turning vehicles are often trapped between Davis Road and Charman Avenue waiting to turn. Turning movement counts should be performed at this location to determine if a left turn signal phase for either direction is warranted on US 30.

FIGURE 10: CHARMAN AVENUE LOOKING NORTH FROM US 30
Magnolia Borough/Lawnside Borough

22. US 30 AT ASHLAND AVENUE
Magnolia Borough
Milepost 9.35
Refer to Aerial Photograph 12 on Page 73

Identified Problems:
Ashland Avenue is a one lane-by-direction street that is only 19 feet wide. It is a residential street that serves the eastern portion of Magnolia and the southern portion of Lawnside. The road is very narrow and the building in the northeast quadrant of the intersection with US 30 is not setback from the sidewalk. The tight turning radius makes it difficult for vehicles on westbound US 30 to turn onto Ashland Avenue and stay within their lane, particularly if there is a vehicle on southbound Ashland Avenue at the intersection. The building also inhibits the sight distance for vehicles on southbound Ashland Avenue waiting to enter US 30. There is a stop sign on Ashland Avenue at US 30.

Recommended Strategies:
There is very little space to widen Ashland Avenue at the intersection without taking property. A maximum of 10 feet total could perhaps be taken from either side of Ashland Avenue to widen the cartway. This will, at least, give vehicles more room to maneuver at the intersection. Street maps show a connector street (Boshell Avenue) between Ashland Avenue and Bryant Avenue which is located about 1/10 of a mile east on US 30. Bryant Avenue is also one lane-by-direction. Field views have not detected this connector. However, if this connector street were able to be opened, Ashland Avenue and Bryant Avenue could become a one-way pair with Ashland Avenue carrying northbound traffic away from US 30 and Bryant Avenue carrying southbound traffic towards US 30.

23. US 30 AT EVESHAM ROAD (CR 544)
Magnolia Borough
Milepost 9.7
Refer to Aerial Photograph 13 on Page 75

Identified Problems:
Left turns from both directions of US 30 are difficult and often dangerous at this location. Because there are no dedicated left turn lanes (even though there is a protected left turn signal phase on eastbound US 30), through vehicles in the inner lane frequently try to merge quickly with the outer lane at the intersection in order to avoid getting stuck behind a vehicle waiting to turn. This is particularly problematic in the eastbound direction of US 30 because the horizontal curve creates somewhat of a sight-distance problem. The lack of a left turn signal phasing on westbound US 30 often leads to drivers that are waiting to make a left turn onto southbound Evesham Road darting between oncoming traffic on eastbound US 30. There is a left turn lane and a dedicated left turn signal phase on both approaches of Evesham Road. There is development in all four quadrants of the intersection. Additionally, the turning radius is very tight at the intersection.

Recommended Strategies:
Jughandles would be the ideal solution to the turning problems faced at this intersection. However, the intersection is fully built out. There does exist, however, the possibility of using existing streets as jughandles. Motorists wishing to make left turns onto Evesham Road should be directed to use existing streets as jughandles. Westbound US 30 motorists can make a right onto Madison Avenue, a right onto Lakewood Street and another right onto southbound Evesham Road. A total of approximately five homes on Madison Avenue and Lakewood Street

would be impacted by an increase in street traffic if this plan is implemented. Motorists on eastbound US 30 can make a right onto Madison Avenue, a left onto Barrett Avenue and another left onto northbound Evesham Road. Approximately seven homes and a ball field on Barrett Avenue will be impacted by this alternative. This will eliminate left turns from the intersection of US 30 and Evesham Road which should lead to a reduction in accidents and congestion on US 30 and Evesham Road in this vicinity. This jughandle alternative will require additional study, particularly in regards to the issue of using residential streets as a jughandle and the impact on existing structures.

24. US 30 AT SOMERDALE ROAD (CR 678)
Somerdale Borough
Milepost 10.67
Refer to Aerial Photograph 14 on Page 77

Identified Problems:
US 30 is two lanes by direction in this vicinity and Somerdale Road is one lane by direction. Both approaches of Somerdale Road are widened at the US 30 intersection to accommodate a left turn lane and a shared through/right turn lane. There is a very tight turning radius for all movements at this location but particularly in the northeast quadrant (westbound US 30 to northbound Somerdale Road). According to local officials, the traffic signal pole in this quadrant has been knocked down several times in the past few years. Eastbound US 30 has a protected left turn signal phase at Somerdale Road but westbound US 30 does not.

Recommended Strategies:
The intersection radius should be increased in all four quadrants to better facilitate right hand turns. There appears to be enough space within the right-of-way to accommodate this minor widening.

25. US 30 IN THE VICINITY OF LAUREL ROAD/WHITE HORSE ROAD (CR 673)
Somerdale Borough, Stratford Borough and Lindenwold Borough
Milepost 11.66
Refer to Aerial Photograph 15 on Page 79

Identified Problems:
CR 673 is signed as White Horse Road to the north of US 30 and as Laurel Road to the south of US 30. White Horse Road is two lanes by direction. At US 30, White Horse Road is widened to accommodate a left turn lane and a through/right turn lane. Traffic congestion and control is particularly a problem on White Horse Road in the vicinity of Berlin Road and US 30. The traffic signals at White Horse Road/Berlin Road and White Horse Road/US 30 are not synchronized and vehicles on White Horse Road are blocking the intersection with Berlin Road and preventing vehicles on westbound Berlin Road from making left turns onto southbound White Horse Road. This is especially a problem during the afternoon peak period because Berlin Road is a major egress route for traffic from the adjacent Lindenwold PATCO/NJ Transit station. Sidewalks are intermittent along this stretch of White Horse Road. Another factor contributing to the congestion on White Horse Road is the bottleneck created by the narrowing of the roadway from two to one lane in the northbound direction at the bridge over the PATCO/NJ Transit rail line.

Laurel Road is one lane-by-direction and is extremely congested. On the south side of US 30, Union Avenue also intersects Laurel Road at US 30, creating a five point intersection. Union Avenue is one-way southbound. At US 30, Laurel Road is widened to accommodate a left turn lane and a through lane. Right hand turns are made using a ramp that parallels the far-side jughandle on eastbound US 30. Vehicles wishing to turn left onto westbound US 30 from

northbound Laurel Road must wait to enter the short 100 foot long dedicated left turn lane because of the large volume of through traffic on Laurel Road. Vehicles using the far-side reverse jughandle on eastbound US 30 also find it difficult to enter northbound Laurel Road because vehicles are stacked past the jughandle. Additionally, there is a fire house on the west side of Laurel Road near US 30 that has a problem gaining access to northbound Laurel Road due to the congestion and tight turning radius. During field visits, municipal officials noted that vehicles on westbound US 30 were making left turns onto Princeton Avenue thus averting the designated jughandle at Berlin Road and US 30.

Recommended Strategies:

The two traffic signals on White Horse Road (at Berlin Road and at US 30) should be better timed to allow traffic on White Horse Road to clear the stretch of road between Berlin Road and US 30. This will allow traffic from Berlin Road to make the turn onto White Horse Avenue. A long term strategy should involve reconstructing the bridge over the PATCO/NJ Transit tracks to accommodate two lanes of travel in each direction as well as pedestrian amenities. Additionally, by straightening and moving the far-side jughandle from eastbound US 30 further north, vehicles from eastbound US 30 will have an easier time entering the northbound Laurel Road. Moving the jughandle will allow the left turn lane to be lengthened by approximately 75 feet. Finally, the borough of Stratford has indicated preliminary plans to move the firehouse located on Laurel Road. If this is done, the left turn lane on northbound Laurel Road can be lengthened significantly. Additionally, left turns from westbound US 30 should be prohibited between CR 673 and Berlin Road in order to eliminate left turns onto Princeton Avenue.

The university/medical center has had plans to construct a new connector road from their parking lot to New Street. If this road were constructed it would provide an additional route for university and medical center traffic as well as the Lindenwold PATCO/NJ Transit station and help alleviate congestion on Laurel Road and the US 30 and Laurel Road/White Horse Road intersection. The road could intersect Laurel Road at a point just south of Kirkwood Avenue and intersect US 30 at New Road.

FIGURE 11: LOOKING SOUTH ON LAUREL ROAD (CR 673) FROM UNION AVENUE SPLIT
Stratford Borough

26. WHITE HORSE ROAD (CR 673) AT STATION AVENUE
Somerdale Borough and Lindenwold Borough
Refer to Aerial Photograph 15 on Page 79

Identified Problems:
White Horse Road frequently backs up from the US 30 and the Berlin Road intersections and blocks Station Avenue. Station Avenue is the only means of access to White Horse Road for the portion of Somerdale that is on the north side of US 30. Station Avenue continues as the PATCO station parking lot drive on the other side of White Horse Road. However, only left and right turns are permitted on eastbound Station Avenue at White Horse Road.

Recommended Strategies:
The intersection should be boxed out and a sign placed on southbound White Horse Road informing motorists to stay out of the box and not block the intersection.

27. PARK AVE. (CR 696) FROM WEST ATLANTIC AVE. TO EAST ATLANTIC AVE. (CR 727)
Lindenwold Borough

Identified Problems:
The sight distance at the intersections of Park Avenue and the parallel West Atlantic Avenue and East Atlantic Avenue is very bad due to the crest of the railroad tracks that lie between West and East Atlantic Avenue. The railroad tracks create a vertical sight distance problem which is compounded by a lack of sufficient street lighting in the area. Vehicles on West and East Atlantic Avenue that are stopped at Park Avenue cannot see vehicles on Park Avenue until the Park Avenue traffic has cleared the railroad tracks.

Recommended Strategies:
Placement of conspicuous signs, perhaps with flashing lights warning motorists of the hidden intersections is recommended for both approaches of Park Avenue. Additionally, milling of the road surface on Park Avenue on both sides of the railroad tracks will force motorists to heed the signs and slow down. Shrubbery and vegetation should also be cut back at this location

0 0.025 0.05 0.1 0.15 0.2 Miles

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
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US 30 CORRIDOR STUDY
Camden County, New Jersey

6 Problem Location
Municipal Boundary

AERIAL PHOTOGRAPH 30:
Park Ave. (CR696) in the Vicinity of
West Atlantic and
East Atlantic Ave. (CR 727)

28. GIBBSBORO ROAD (CR 686) FROM US 30 TO WHITE HORSE AVENUE
Clementon Borough
Refer to Aerial Photograph 18 on Page 85

Identified Problems:
Gibbsboro Road carries one lane of traffic by direction but has a very wide cartway with only the median striped. The 46 feet wide cartway (23 feet in each direction) of Gibbsboro Road encourages speeding by creating the illusion of a wide open roadway. This presents problems at intersections as through vehicles attempt to pass turning vehicles at high speeds. Gibbsboro Road was recently restriped for three lanes (one through lane in each direction and a center turn lane) to slow down traffic and eliminate such maneuvers in the vicinity of Garfield Avenue. Also, Lindenwold Borough recently striped Gibbsboro Road north of US 30 to be two lanes by direction.

Recommended Strategies:
The shoulder should be diagonally striped and a center left turn lane should be installed at intersections. The existing cartway is wide enough to accommodate a 12 foot wide center turn lane and a 12 foot wide through lane in each direction while still maintaining a five foot wide shoulder in both directions. The diagonally striped shoulders should help slow down traffic by constraining vehicles to a well-defined travel lane.

29. US 30 AT GIBBSBORO ROAD (CR 686)
Lindenwold Borough and Clementon Borough
Milepost 13.53
Refer to Aerial Photograph 18 on Page 85

Identified Problems:
Gibbsboro Road carries one lane of traffic by direction. At US 30, both approaches of Gibbsboro Road have a left turn lane and a shared through/right turn lane. However, the traffic signal at this intersection does not have a protected left turn phase for either Gibbsboro Road approach to US 30. US 30 is two lanes by direction at the intersection. There is a protected left turn signal phase for eastbound US 30 but not westbound US 30. This is the highest accident location along the corridor during the past three years with over half the accidents involving vehicles making a left turn.

Recommended Strategies:
Due to the high number of accidents, a dedicated left turn signal phase should be provided on all approaches to this intersection.

30. US 30 IN THE VICINITY OF CROSS KEYS ROAD (CR 689)/MILFORD ROAD
Berlin Borough
Milepost 16.51
Refer to Aerial Photograph 22 on Page 93

Identified Problems:
This is actually a five point intersection with Haddon Avenue (CR 561) forming the fifth leg. Westbound Haddon Avenue begins at the intersection of US 30 and Cross Keys Road/Milford Road. Eastbound Haddon Avenue intersects US 30 150 feet to the west. There is a concrete island between eastbound and westbound Haddon Avenue along the north side of US 30. Eastbound Haddon Avenue traffic can only turn right onto westbound US 30. A traffic signal controls the operations at this intersection. US 30 carries two lanes in each direction west of Milford Road and one lane in each direction east of Milford Road. The area that is reduced to one travel lane in each direction also provides on-street parking in both directions. The Berlin Cross Keys Road approach carries one lane into the intersection to serve the right turns and through movements. There are no left turns permitted from Berlin Cross Keys Road to US 30 westbound. These movements are accommodated via Park Drive which intersects Berlin Cross Keys Road approximately 1,200 feet south of US 30. Milford Road also carries one approach lane into the intersection. This 18 foot lane serves right, through and left turn movements. Although there are parallel sets of loop detectors embedded in the roadway, it is difficult for two vehicles to line up abreast. Through and right turning vehicles have difficulty bypassing vehicles queued up to turn left. The northbound Milford Road departure lane is also 18 feet wide giving this leg a cartway width of 36 feet.

There is no direct access to the drug store on the southwest parcel of this intersection from

westbound US 30. To gain access to the drug store, motorists on westbound US 30 have been using Haddon Avenue to make illegal turns into the drug store access drive on US 30. Westbound US 30 motorists are passing through the intersection entering northbound Haddon Avenue and then making a quick left turn to enter the southbound Haddon Avenue queue at it's intersection with US 30. Even though the roadway is angled to only permit right turns motorists are attempting to cross US 30 and enter the drug store via the access drive on the south side of US 30 directly across US 30. This is a safety issue for vehicles on Haddon Avenue as vehicles are slowing down or blocking the northbound lane in order to enter the southbound queue. Since this portion of Haddon Avenue is a viaduct with no access point, speeds tend to be higher and the potential for rear end collisions between through vehicles and the slowed vehicles is high. Secondly, motorists are blocking the westbound lanes of US 30 as they wait for a space to open up in the eastbound US 30 queue so they can cross and enter the drug store parking lot. There is an indirect route for westbound US 30 motorists to reach the drug store but it requires a long (approximately ½ mile) and circuitous detour. By continuing on westbound US 30, motorists can use the jughandle at the signalized intersection of Park Drive and take Park Drive to Cross Keys Road and enter the drug store by the Cross Keys Road entrance.

Additionally, the southbound Milford Road approach to US 30 is striped for one lane. Left turning vehicles frequently line up in the center of the approach lane preventing through or right turning vehicles from entering the intersection. This approach leg experiences significant congestion during peak periods.

Recommended Strategies:
A low-rise concrete median should be installed on Haddon Avenue to prevent motorists on westbound Haddon Avenue from crossing the median. The raised median should be continued for the length of the viaduct to prevent motorists from trying to make a U-turn at a point further west on Haddon Avenue. Additionally, eastbound Haddon Avenue should be channelized at the intersection with US 30 to force vehicles to turn right onto westbound US 30.

FIGURE 12: HADDON AVENUE (CR 561) LOOKING WEST FROM US 30 INTERSECTION
Berlin Borough

31. US 30 FROM JACKSON ROAD (CR 534) TO EAST TAUNTON AVENUE
Berlin Borough
Milepost 16.95 to 16.98
Refer to Aerial Photograph 22 on Page 93

Identified Problems:
West of East Taunton Avenue, US 30 carries one travel lane in each direction and allows on-street parking. Between East Taunton Avenue and Jackson Road, US 30 is stripped for one lane by direction but does not permit on-street parking. East of Jackson Road, US 30 carries two lanes in each direction. East Taunton Avenue intersects US 30 at a signalized intersection. At this intersection, the East Taunton Avenue approach provides one 11 foot lane to accommodate all movements. Across from East Taunton Road, is the driveway access for a drugstore. The US 30 eastbound and westbound approaches at East Taunton Avenue, although stripped for one lane, are 23 feet wide and vehicles frequently line up two abreast. Jackson Road and Tansboro Road (CR 561) intersect US 30 at oblique angles at an unsignalized intersection. Tansboro Road carries one-way traffic away from US 30 eastbound. Jackson Road Carries one lane in each direction and provides one 11 foot approach lane to US 30. Because of the alignment of this intersection the Jackson Road approach accommodates primarily right turns. Left turns from Jackson Road to US 30 eastbound use Washington Avenue.

Significant congestion occurs in the vicinity of these intersections. Part of the problem occurs because of the transition from two westbound travel lanes to one travel lane. Lack of lane markings on the westbound approach at East Taunton Ave leads to driver confusion. Weaving and left turning movements from US 30 eastbound onto Jackson Road creates safety and access problems. There are no left turn lanes on US 30 in this vicinity to accommodate turning

movements. In the westbound direction, queues from the traffic signal at East Taunton Road frequently spill back across the intersection with Jackson Road. In this circumstance, US 30 eastbound traffic can not turn left and traffic from Jackson Road can not turn right.

Recommended Strategies:
Restripe US 30 to provide two lanes in each direction between East Taunton Road and Washington Avenue. Designate a westbound left turn lane at East Taunton Road to access the new drugstore. Designate an eastbound left turn lane to access East Taunton Road and another eastbound left turn lane to access Jackson Road. Also, install "lane reduction transition" signs (W4-2 and W9-2 - Manual on Uniform Traffic Control Devices) west of East Taunton Road to indicate transition from two lanes to one. Vegetation near the bank on the northeast corner of US 30 and East Taunton Road restricts sight distance and should be cut back.

32. US 30 UNDEVELOPED PARCELS IN BERLIN
Berlin Borough
Milepost: 17.46 to 17.77
Refer to Aerial Photograph 23 on Page 95

Identified Problem:
US 30 carries two travel lanes in each direction in this vicinity within a 46 foot cartway. Unsignalized intersections exist at Pine Avenue, Florence Avenue, Sudbury Avenue and Townsend Avenue. These are extremely low volume residential streets. Florence Avenue and Townsend Avenue provide access to West Jersey Hospital - Berlin Division which is located a block south of US 30. The Berlin Shopping Center has 750 feet of frontage along the south side of US 30. The north side of US 30 is undeveloped through this section.

The two undeveloped parcels adjacent to US 30 across from the Berlin Shopping Center and West Jersey Hospital have the potential to generate a significant number of trips if developed as residential developments. Impacts from the potential developments could be felt on US 30, Jackson Road, Tansboro Road as well as the local streets mentioned above.

Recommended Strategies:
Berlin Borough should review their master plan to consider the creation of an access road to serve these developments which would create a new four leg intersection at an existing intersection on US 30 (potentially Florence Avenue or the entrance to the Berlin Shopping Center).

V. CONGESTION MANAGEMENT SYSTEM

INTRODUCTION

The Congestion Management System (CMS) is one of the six management systems established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The purpose of the management systems is to aid decision-makers in gauging system performance and needs, and selecting cost-efficient strategies and actions to improve and protect the investment in the nation's infrastructure. The management systems are used in a variety of planning endeavors such as prioritizing and selecting projects for the Transportation Improvement Program (TIP), guiding the planning activities of the Long Range Plan and serving as inputs for Major Investment Studies (MIS).

The Congestion Management System is defined in the federal regulations as a "systematic process that provides information on transportation system performance and alternative strategies to alleviate congestion and enhance the mobility of persons and goods." The federal guidance declares that the CMS should include strategies to reduce single occupant vehicle (SOV) travel and improve the efficiency of the existing transportation infrastructure.

A major role of the Congestion Management System is to identify all capacity-adding SOV projects. Any project that receives federal funds, is located in an area that is in nonattainment of the National Ambient Air Quality Standards, and results in the equivalent of one or more lanes of carrying capacity for single occupant vehicles (adding general purpose lanes to an existing highway or constructing a new highway) must result from a region's Congestion Management System. The Federal Highway Administration (FHWA) has explicitly exempted projects that address safety problems and eliminate bottlenecks from the CMS requirements. A safety improvement is a physical or operational improvement that is implemented primarily to reduce accident frequency or severity. A bottleneck is considered a limited section of the transportation system in which the maximum carrying capacity is significantly less than the adjoining sections.

Determining whether a highway required widening or a new alignment previously occurred in the project development phase. In keeping with the spirit and intent of ISTEA, this decision is now made in the planning process and project development instead focuses on alignment and environmental issues. In 1997, DVRPC developed a regional Congestion Management System for New Jersey in conjunction with NJ DOT and the counties. The result of that collaboration is the *New Jersey Congestion Management System Report* (abstract #98020), which serves as the operational CMS for the New Jersey portion of the DVRPC region. The *New Jersey Congestion Management System Report* serves as a framework for CMS planning activities. CMS analysis for specific locations or projects is performed where applicable using guidelines set forth in the *New Jersey Congestion Management System Report*. The *New Jersey Congestion Management System Report* provides an initial assessment of the appropriateness of SOV widening within a particular corridor. Further study may be necessary to determine if SOV widening is warranted for a particular facility.

As part of its Long Range Plan and Transportation Improvement Program development process, DVRPC reviews projects to determine if all potential SOV capacity-increasing projects are contained in this document. Highway improvements which do not add a general purpose lane and exempted project categories (i.e., safety improvements and elimination of bottlenecks) do not require a determination of CMS consistency.

A project is said to result from the regional CMS if SOV widening is identified in the *New Jersey Congestion Management System Report* as either a *very practical* or *practical* strategy for the (sub)corridor. DVRPC makes a determination of whether a more detailed CMS analysis is required to identify appropriate travel demand reduction or operational management strategies. In many cases, congestion levels or project scope may not warrant a detailed study. In such instances, a review of previously screened strategies to detect appropriate supplementary congestion mitigation techniques will suffice. If SOV widening is deemed *not very practical* in the *New Jersey Congestion Management System Report*, DVRPC will make a recommendation, after consultation with NJ DOT and FHWA, to the Regional Transportation Committee that the project should be abandoned or that a CMS study is required to justify the need for SOV widening and to identify appropriate CMS commitments.

The *New Jersey Congestion Management System Report* is based on 16 travel corridors that were established in DVRPC's *Direction 2020 Long Range Transportation Plan*. Each CMS corridor is typically organized around a major highway and parallel road. Even though a corridor contains many roads and CMS recommendations apply to the entire corridor, the primary focus is on the major highway(s). To be more reflective of the transportation network, land use and trip-making patterns, corridors were divided into subcorridors. In each subcorridor the location and severity of traffic congestion in the CMS network was evaluated along with the primary and secondary causes of congestion. Similarly for the transit network, all bus routes and rail stations in the subcorridor are noted along with service frequency and parking availability where applicable. This information was compiled on corridor fact sheets.

Over 60 improvement strategies were evaluated to determine their effectiveness in reducing SOV travel within a subcorridor. The strategies are grouped by the three goals of the regional CMS: (1) easing traffic congestion through the reduction of single-occupant vehicles; (2) optimizing the efficiency of the existing transportation systems; and (3) improving access to and proficiency of the transportation network to relieve congestion and improve the mobility of goods and people. The strategies range from low-cost alternatives to driving , to moderate improvements to the transit and highway systems and ultimately to significant SOV capacity improvements.

For each subcorridor, strategies were reviewed for applicability and effectiveness based upon characteristics of the transportation network, the extent and cause of traffic congestion, and population, employment and other characteristics inventoried in the *Direction 2020 Transportation Plan* corridor analyses. A standard strategy matrix was developed that rated each strategy as either *very practical, practical* or *not very practical* within a subcorridor.

Taken together, the fact sheets and strategy matrices provide a comprehensive macro-level overview of the location and causes of congestion and improvement strategies. The corridor overviews summarize the existing transportation facilities in the subcorridors, the level of congestion and key causes, and presents a brief overview of the primary and secondary strategies to manage congestion. The *New Jersey Congestion Management System Report* is considered a systems-level analysis because it examines generalized highway links and evaluates strategies applicable to larger areas. In the project development and planning process, the opposite is true; the focus is on a small study area.

FINDINGS OF THE NEW JERSEY CONGESTION MANAGEMENT SYSTEM REPORT

In the *New Jersey Congestion Management System Report*, the Camden to Berlin corridor encompasses US 30 from the Benjamin Franklin Bridge to NJ 73. The corridor was broken down into three subcorridors to better reflect the surrounding land use and travel patterns. The Camden subcorridor is characterized by older commercial strip development and a high density mix of residential, institutional and commercial uses in downtown Camden in varying states of economic vitality. The Vorhees/Lindenwold/Haddonfield subcorridor is distinguished by residential development and intense commercial development clustered along major arterial highways. The Berlin subcorridor is characterized by a mix of residential, agricultural and wooded areas. Each of the subcorridors has different sorts of transportation-related problems and each requires a unique set of solutions. Therefore, each subcorridor was analyzed separately.

Volume to capacity (V/C) ratios were the primary measure of congestion within a corridor. The V/C ratios were calculated using DVRPC traffic simulation model. The model is a macro-scale approach. Therefore, congestion on a more localized level may not appear. DVRPC met with state and county transportation officials and representatives of traffic reporting services and State Police to review the findings of the travel simulation model and to determine if any congested locations were omitted. Some areas may not currently be congested but proper steps taken today can help assure that they will not become congested in the future.

Strategies to alleviate congestion within the subcorridors were selected from a matrix of over 60 transit, transportation demand management, and traffic operations improvements. Staff reviewed and ranked the applicability of each of the strategies to the problems identified within the corridor. A strategy synopsis was then constructed for each of the subcorridors to highlight the most appropriate strategies. The appendix contains the complete findings of the Camden to Berlin corridor from the *New Jersey Congestion Management System Report.*

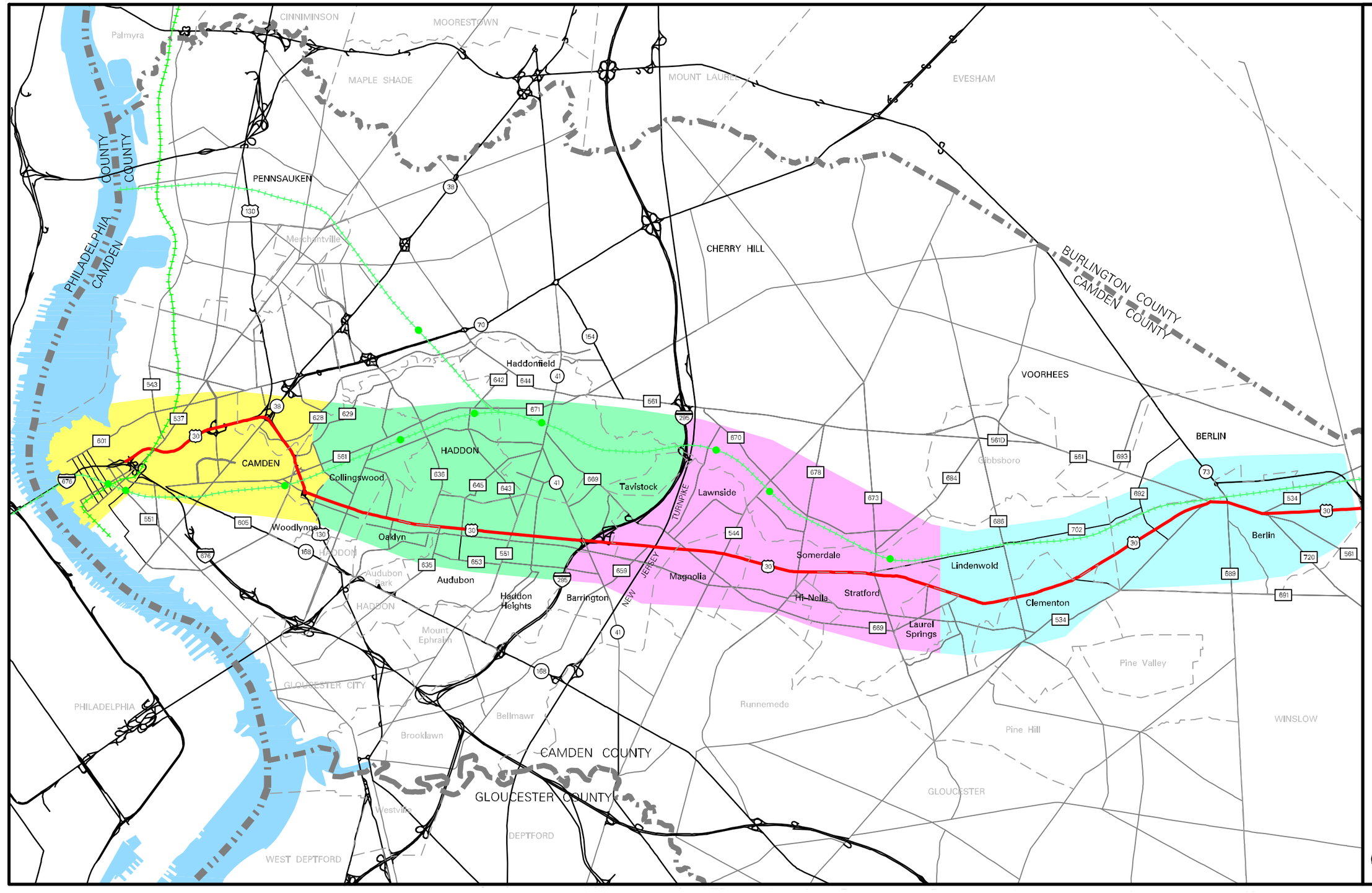
US 30 CORRIDOR CONGESTION MANAGEMENT SYSTEM ANALYSIS

The US 30 Corridor study provides a great opportunity to update the *New Jersey Congestion Management System Report* and look at CMS issues within the corridor in greater detail. Congested locations identified in the *New Jersey Congestion Management System Report* were

augmented by touring the corridor with local officials such as planners and police. Since municipal representatives travel the roads every day they are exceedingly qualified to identify congested areas. The municipal representatives helped identify congested locations, including some additional areas that were not identified in the *New Jersey Congestion Management System Report*.

Information gathered in the field views was compared to the findings of the *New Jersey Congestion Management System Report* and strategies were chosen to address congestion throughout the corridor and at problem locations discussed earlier in this report. A subcorridor overview was then developed from the problem locations, the *New Jersey Congestion Management System Report* and field observations to address congestion within the entire subcorridor. Subcorridor boundaries shown on Map 9 reflect the approximate boundaries of the subcorridors. In many cases, land use and transportation characteristics flow from one subcorridor into another with no clear demarcation. The boundaries of the study area and the *New Jersey Congestion Management System Report* also differ slightly. The *New Jersey Congestion Management System* utilized a broader corridor which coincided with the *Direction 2020 Long Range Plan*. The biggest difference was the inclusion of CR 561 and large portions of Vorhees and Cherry Hill townships as well as Gibbsboro in the *New Jersey Congestion Management System Report*. Due to the changes in the boundaries for the US 30 Corridor Study, the CMS subcorridors were slightly revised to be consistent and are: Camden to Woodlynne, Collingswood to Haddon Heights, Barrington to Stratford, and Lindenwold to Berlin.

An overview of each subcorridor follows including congested facilities and recommended strategies. The recommendations are compatible with transportation problem recommendations contained in the US 30 Corridor Study. Map 10a, 10b and 10c show congested locations in the US 30 corridor. The *New Jersey Congestion Management System Report* serves as the basis for the congested facilities. Changes were made based on field views and discussions with local representatives.



US 30 Corridor Study

Map 9

CMS Subcorridors

Subcorridors

- Camden to Woodlynne
- Collingswood to Haddon Heights
- Barrington to Stratford
- Lindenwold to Berlin

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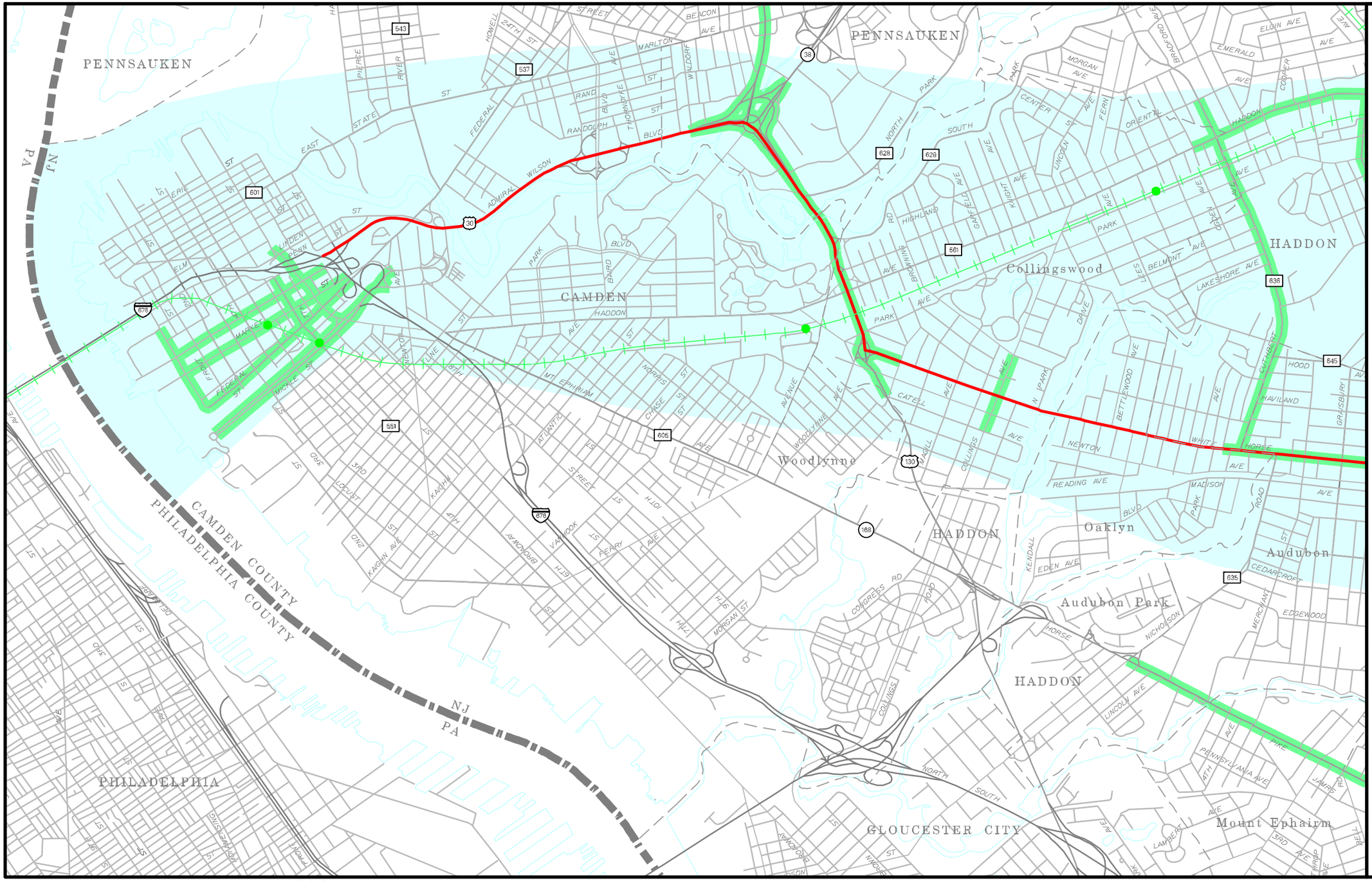
DELAWARE VALLEY REGIONAL PLANNING COMMISSION
July 2002



US 30 Corridor Study

Map 10a

Congested Facilities

Section A

Congested Facilities

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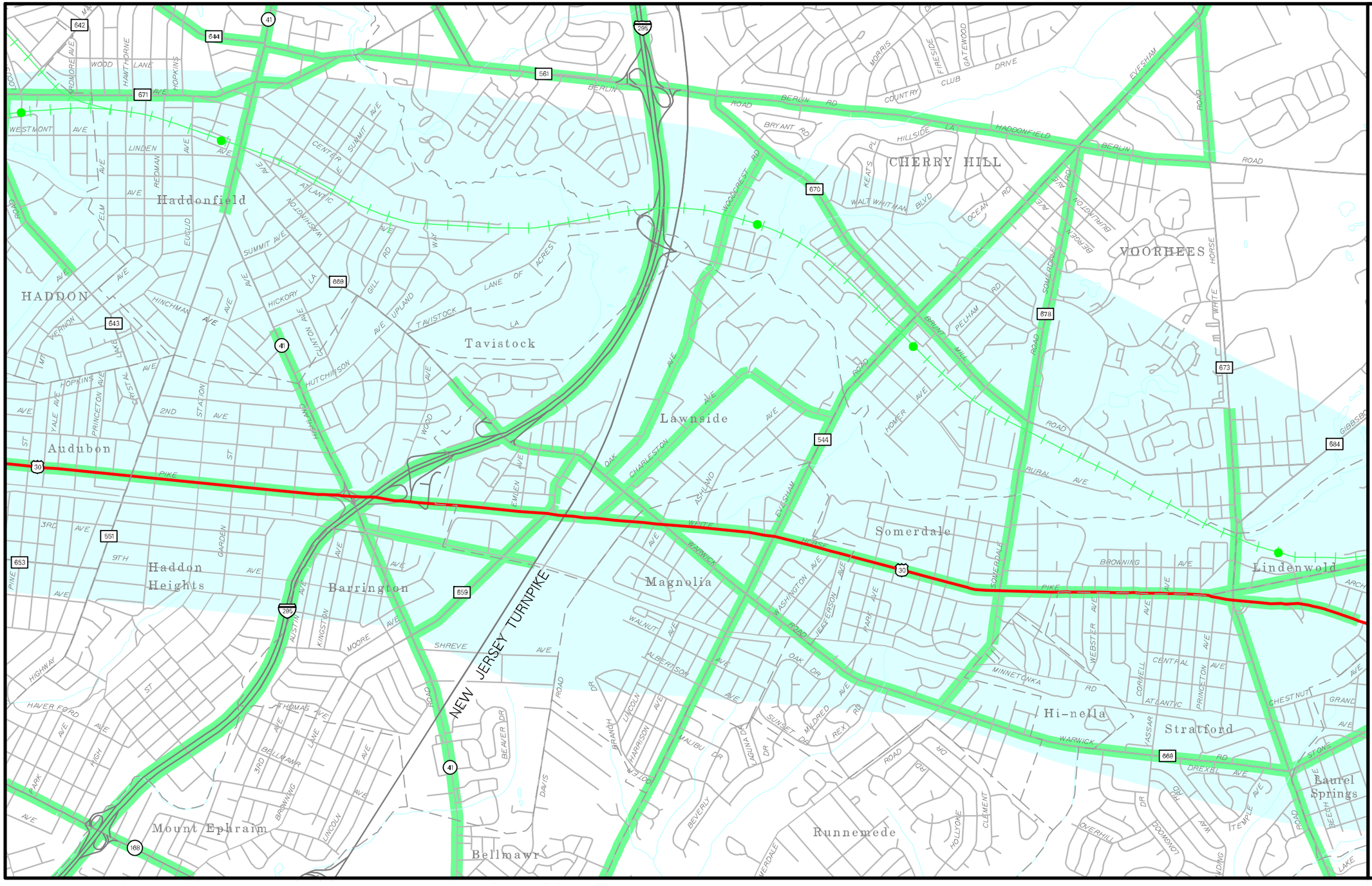
DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
July 2002



US 30 Corridor Study

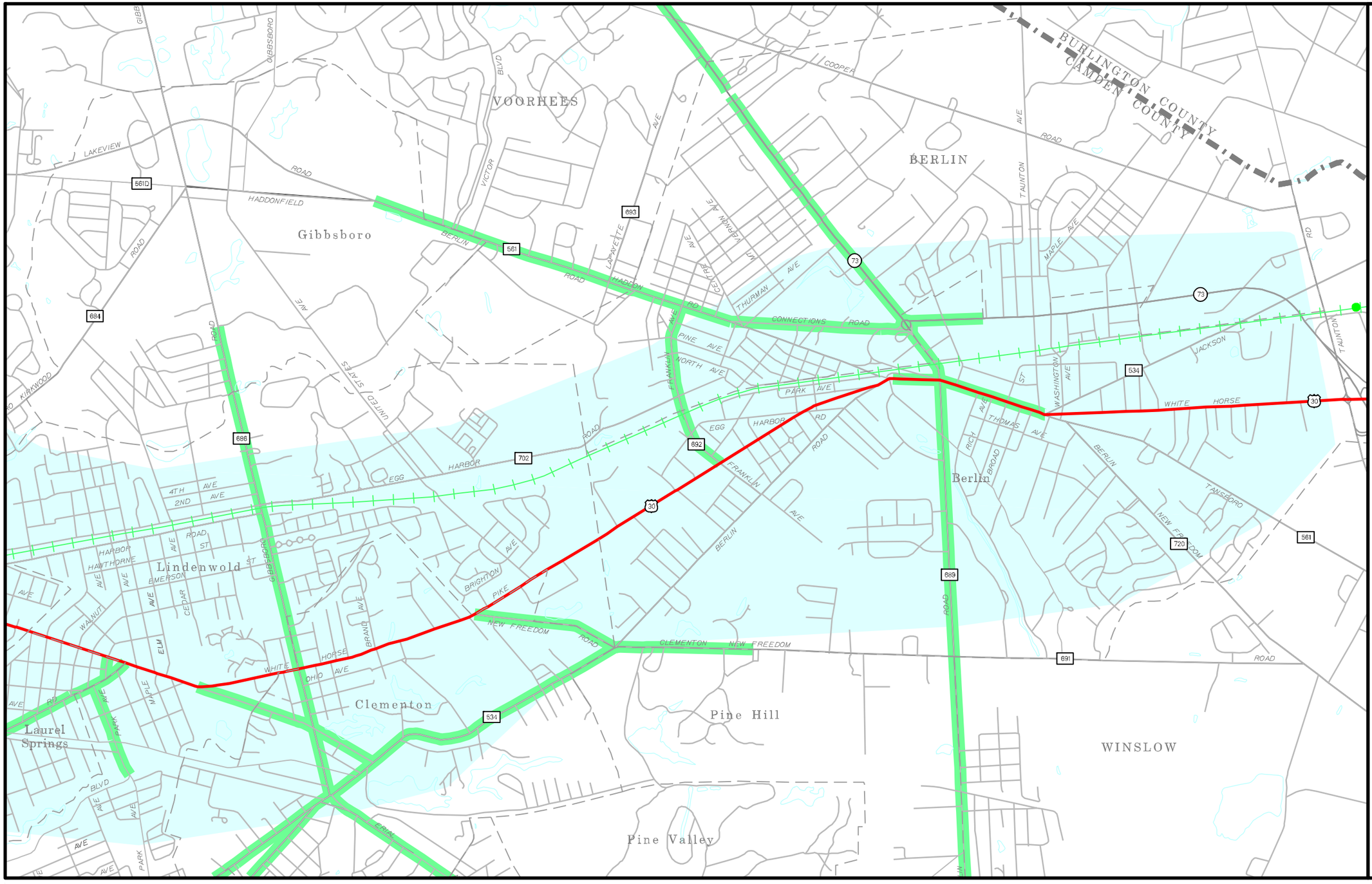
Map 10b

Congested Facilities

Section B

Congested Facilities

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
July 2002



US 30 Corridor Study

Map 10c

Congested Facilities

Section C

Congested Facilities

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DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
July 2002

CAMDEN TO WOODLYNNE SUBCORRIDOR

Subcorridor Overview/Primary Issues:

Redevelopment of vacant and underused parcels; pedestrian and bike connectivity; Transit linkages; Special event generators along the waterfront; Convergence of highway and transit facilities.

This subcorridor was developed earlier than the other subcorridors and is currently in a state of redevelopment. Camden has made significant strides in redeveloping tourism-based attractions along the waterfront. However, many parcels in other portions of the city are either underutilized or vacant. The presence of the Camden County administration and courts helps insure a steady employment base in Camden. Due to its proximity to Philadelphia and Camden, many major arterial facilities converge in this subcorridor. Most major routes follow old trials which radiated from the Camden waterfront. US 30, US 130, NJ 38 and NJ 70 all converge near the Airport Circle. The Admiral Wilson Boulevard (US 30) carries traffic from these facilities directly to the Ben Franklin Bridge and Philadelphia. I-676 also carries traffic to and across the bridge. Volumes on these roadways tend to be high in this subcorridor. However, most of these major facilities have been widened in recent years and have sufficient capacity.

Bus transit service also radiates from Camden and is abundant in this subcorridor. All routes utilize the Walter Rand Transportation Center in downtown Camden and most travel to Philadelphia. All major arterial roadways in this subcorridor are served by transit, including US 30, US 130, CR 537, CR 551, CR 561 and CR 601. The Southern New Jersey Light Rail Transit line will begin operation between Camden and Trenton in 2003.

Recommended CMS Strategies:

Camden has a high percentage of households that do not own an automobile. Therefore, transit and pedestrian facilities need to be aggressively touted in the subcorridor. Bike and pedestrian initiatives should also play an important role in this subcorridor because the density and closeness of development promotes walking and biking. Because of the dense development in the subcorridor and large employment base, particularly in Camden, CMS strategies should focus on shifting modes from the private car to transit, carpool or even bike and pedestrian travel. Future improvements should focus on better coordination and enhancing transit service and traffic operations improvements.

US 30 is a four lane-by-direction limited access facility through much of the subcorridor and is designated as the Admiral Wilson Boulevard. From the Airport Circle to the Collingswood Circle it is co-designated with US 130. This co-designated section is a two lane-by-direction facility with at-grade intersections and numerous driveways. Several bottlenecks exist along this segment of US 30, including the bridge over Cooper River due to the lane drop on eastbound US 30/US 130. Capacity increase is not seen as a particularly practical strategy for this corridor with the exception of isolated intersection improvements and the elimination of bottlenecks. The new park along Admiral Wilson Boulevard presents a great opportunity to develop amenities for bicyclists and pedestrians, particularly commuters.

COLLINGSWOOD TO HADDON HEIGHTS SUBCORRIDOR

Subcorridor Overview/Primary Issues:

This subcorridor is comprised of portions of Collingswood, Haddon Township, Oaklyn, Audubon, Haddon Heights and Haddonfield. The subcorridor is primarily characterized by small boroughs with older but still vibrant downtown business districts along Haddon Avenue (CR 561) and US 30. These are very much walkable communities with excellent transit service, including the PATCO High-Speed Line. These amenities provide viable alternatives to driving in this subcorridor. Pedestrian and vehicle conflicts are pertinent issues in this subcorridor. Congestion is primarily occurring on north-south streets especially during peak periods in the vicinity of PATCO stations. Routes that run parallel to US 30, such as East Atlantic Avenue, are beginning to have an increase in volume as motorists seek to avoid congestion on US 30. Several major intersections, Cuthbert Boulevard and US 30 being a good example, do not have the capacity to handle the volume of traffic and are fully developed, making widening difficult if not impossible. US 30 is generally a two-lane facility within this subcorridor with left turn lanes at some intersections. Left turns at intersections and mid-block are extremely difficult and hinder traffic flow in this subcorridor.

Recommended CMS Strategies:

The strengths of this subcorridor should be emphasized. Therefore, strategies should focus on improving the safety and attractiveness of pedestrian, bicycle and transit facilities. The East Atlantic Avenue bikeway should be developed. This facility will serve as a quick and safe alternative for bicyclists. A key CMS strategy should be reducing the number of curb cuts. This can be accommodated by closing redundant curb cuts or consolidating adjacent access points to a common access point. This will help in reducing vehicle-pedestrian conflicts thereby improving safety and encouraging walking as a driving alternative. Better transit coordination is also important. Improvements such as having buses stop at each PATCO station may increase transit ridership. Traffic operation improvements are also warranted in this subcorridor, specifically, improvements for making left turns on US 30.

BARRINGTON TO STRATFORD SUBCORRIDOR

Subcorridor Overview/Primary Issues:

US 30 is a four lane facility to the east of I-295 and adjacent land use varies more so than on the west side of I-295. Unlike, the segment to the west of I-295, shoulders along this stretch of US 30 are narrow or non-existent. Several strip shopping centers and big box retailers are located along US 30 in this subcorridor. These businesses tend to be located to the rear of their parcel with ample parking adjoining US 30. There are also several older, smaller commercial establishments located closer to the roadway. Congestion is particularly acute on the major north-south arterials in this corridor. Evesham Road (CR 544), Somerdale Road (CR 678) and Laurel Road/White Horse Road (CR 673) carry high volumes of traffic and have high traffic generators such as the Echelon Mall and Kennedy Memorial Hospital located on them. These roads are also main routes to PATCO stations and I-295. The subcorridor is surrounded by burgeoning communities on the north and south. Residents and workers in these municipalities

are traversing the subcorridor and increasing traffic volumes within the subcorridor.

Recommended CMS Strategies:
Traffic operation improvements focusing on intersection widening and traffic signal enhancements are warranted for this subcorridor. Development of activity centers could help in eliminating vehicle trips. This is pertinent to this subcorridor because of the incoming big box retail developments and the probable redevelopment of smaller parcels along US 30. Car/van pooling, ridematching services and park and ride lots may also help reduce vehicle trips as would increased transit service and new or expanded bus routes.

LINDENWOLD TO BERLIN SUBCORRIDOR

Subcorridor Overview/Primary Issues:
US 30 is generally a four lane facility within the subcorridor. It runs through the downtown business district in Berlin where it becomes a one lane by direction facility. This subcorridor has similar congestion issues to the Barrington to Stratford subcorridor. The roadside is developed throughout the subcorridor but at a much less dense scale compared to the preceding subcorridor, with the exception of the Berlin business district. Congestion on north-south routes is increasing due to the heightened development in surrounding municipalities.

Recommended CMS Strategies:
As parcels are developed or redeveloped it will be important to designate activity centers and make sound land use decisions. The Lindenwold PATCO station is the terminus of the line and the closest station to many of the expanding communities to the east and south. Parking is already full and requires a long walk from many areas of the parking lot. Expanded parking facilities at this and perhaps other PATCO stations is warranted. Intersection improvements are also needed within this subcorridor. Indicated problems include tight turning radius and lack of protected traffic signal phase for left turns.

COLLECTIVE CMS STRATEGIES

The preceding section details the primary issues and recommendations at a subcorridor level. There are, however, several corridor-wide problems, many of which have been noted in the US 30 Corridor-Wide Problems section of this report. These issues are commonplace along the entire length of the corridor. Subsequently, certain CMS strategies, such as ridematching and telecommuting are pertinent for the entire corridor. Many of the corridor-wide strategies, such as pedestrian and bicycle improvements have been highlighted in the subcorridor assessment due to their particular appropriateness in that subcorridor. Table 8 shows the applicability of selected CMS strategies within each of the four subcorridors. Certain strategies were not warranted for any of the subcorridors and were not included in the table. Unlike the matrix from the *New Jersey Congestion Management System Report*, only the general applicability (i.e., applicable or not applicable) of the strategy was noted instead of ranking the appropriateness of the strategy (i.e., very practical, practical or not practical). Additional general purpose lanes are

not indicated as an appropriate strategy for the corridor. Any additional general purpose lane will increase volumes on this road and most likely lead to the need to acquire a great many properties which would in turn lead to an extensive change in the land use and nature of the corridor. The focus in this corridor should be on redevelopment of the existing land uses and not wholesale redevelopment. The elimination of bottlenecks, however, is warranted.

TABLE 8: SELECTED CMS STRATEGY APPLICABILITY BY SUBCORRIDOR

Strategy	Camden to Woodlynne	Collingswood to Haddon Heights	Barrington to Stratford	Lindenwold to Berlin
MODE SHIFT				
Carpool/Vanpool	✔	✔	✔	✔
Guaranteed Ride Home Program	✔	✔	✔	✔
Demand Responsive Transit Service				✔
Transit Marketing	✔	✔	✔	✔
Pedestrian Improvements	✔	✔	✔	✔
Transit First Policy	✔	✔		
Promotion of Transitchek	✔	✔	✔	✔
Bicycle Improvements	✔	✔	✔	✔
Park and Ride			✔	✔
TRANSPORTATION DEMAND MANAGEMENT				
TMA	✔	✔	✔	✔
Ride Matching	✔	✔	✔	✔
Telecommuting	✔	✔	✔	✔
GROWTH MANAGEMENT				
Activity Centers			✔	✔
Land Use Policies and Regulations	✔	✔	✔	✔
ACCESS MANAGEMENT				
Median Control	✔	✔	✔	✔
Driveway Controls	✔	✔	✔	✔

TABLE 8: SELECTED CMS STRATEGY APPLICABILITY BY SUBCORRIDOR

Strategy	Camden to Woodlynne	Collingswood to Haddon Heights	Barrington to Stratford	Lindenwold to Berlin
TRANSIT SERVICE/OPERATIONS IMPROVEMENTS				
Traffic Signal Preemption	✔	✔		
Transit Coordination	✔	✔	✔	✔
New Transit Service				✔
Bike Improvements at Stations	✔	✔	✔	✔
Transit Enhancements & Expansion	✔	✔	✔	✔
TRAFFIC OPERATIONS IMPROVEMENTS				
Intersection and Roadway Widening		✔	✔	✔
Channelization	✔	✔	✔	✔
Traffic Surveillance and Control	✔	✔	✔	✔
Computerized Signal Systems	✔	✔	✔	✔
Elimination of Bottlenecks	✔	✔	✔	✔
ALTERNATIVE WORK HOURS				
Staggered Work Hours & Flex-Time	✔	✔	✔	✔
Compressed Work Weeks	✔	✔	✔	✔
TRANSIT CAPITAL IMPROVEMENTS				
Expand Parking at Rail Stations	✔	✔	✔	✔
INTELLIGENT TRANSPORTATION SYSTEMS				
Intelligent Bus Stops	✔	✔	✔	✔
Advanced Mode Choice System	✔	✔		
Traveler Information Services	✔	✔	✔	✔
GENERAL PURPOSE LANES				
SOV Roadway Widening				

VI. PLAN IMPLEMENTATION

The *US 30 Corridor 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 corridor. 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 9: *US 30 Corridor Transportation Improvements Implementation Matrix* on page 211. 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 State Development and Redevelopment Plan (SDRP) Centers designation, Municipal Distress Index, project priority, cost range and project benefits. The stakeholders necessary to carry out the plan are also identified.

State Development and Redevelopment Plan (SDRP) Centers and Municipal Distress Index

Centers are an important part of the State Plan's Resource Planning and Management Structure for achieving the goals of the State Planning Act. The concept of Centers is the organizing planning principle for achieving a more effective and efficient pattern of development in New Jersey. Under the Goals, Strategies and Policies of the State Plan, new growth and development should be organized into compact development in the form of Centers surrounded by carefully controlled "environs" by way of municipal master plans and regulations and through public investment policy. Specifically, the SDRP defines a Center as " central places within Planning Areas where growth either should be attracted or not attracted, depending upon the unique characteristics and growth opportunities of each Center". The Plan identifies five types of Centers: 1) Urban Centers; 2) Towns; 3) Regional Centers; 4) Villages; and 5) Hamlets and designates specific locales as centers. The City of Camden is the sole "designated centers" located within the corridor. However, several municipalities have been identified in the State Plan by counties and municipalities as either Regional or Town Centers through the cross-acceptance process. They are: Berlin Borough and Township (Town), Collingswood (Town), Cherry Hill (Regional), Haddonfield (Town) and Lindenwold (Regional).

The Municipal Distress Index (MDI) ranking is one of a number of factors used for determining priority in the Statewide Policies for Public Investment Priorities as well as for priority for municipal strategic revitalization planning under Statewide Policies for Urban Revitalization in

the State Plan. The MDI has also been used as one of the factors in distributing certain "need based" funds most recently in the NJ DOT's criteria for Transportation Enhancement Projects. The ranking is maintained by the New Jersey Office of State Planning and represents a composite distress comparison for all 567 New Jersey municipalities. The index is composed of 1) the Economic Dimension of Distress measured by the unemployment rate and per capita income; 2) the Physical Infrastructure Dimension of Distress measured by ratio of older housing and ratio of substandard housing units; 3) the Social Dimension of Distress measured by the percentage of children on welfare and population rate of change; and 4) the Fiscal Dimension of Distress based on the average equalized tax rate and valuation per capita. Municipalities appearing in the top 100 on this list are identified in Table 9.

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 immanent 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 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 accessability 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 accessability 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 30 and 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 on US 30. In addition, many of the cross streets are designed, built and maintained by local and county government, and these also impact how well US 30 functions. 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 of 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. In addition to US 30 these include: I-295, NJ 38, NJ 41, NJ 73, and US 130. 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.

Camden 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. The 500 series of county roads are typically part of a statewide network of interconnected county routes; therefore 500 series routes are generally more significant than the other county roads. There are several 500 series routes within the corridor: CR 534, CR 537, CR 544, CR 551 and CR 561. 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, 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.

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 rang plan (LRP) 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.

TABLE 9: US 30 TRANSPORTATION IMPROVEMENTS IMPLEMENTATION MATRIX

Location		*Municipality*	*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
1	Camden Waterfront	Camden City	D, C	H	H**	CON, MOB, ED	MCD	CC, DOT
2	Cooper Street From Broadway (CR 551) to 8th Street	Camden City	D, C	H	L	SAFE	MCD	DOT
3	10th Street in the Vicinity of Newton Street	Camden City	D, C	M	M	SAFE, MOB	DOT	MCD, CC
4	Woodlynne Avenue, Elm Avenue and Evergreen Avenue	Woodlynne Boro.	D	M	L	SAFE	MCD	CC, DOT
5	(US 130) Crescent Boulevard at Laurel Avenue	Woodlynne Boro.	D	M	L	SAFE	DOT	MCD
6	US 30 at Collings Avenue (CR 630)	Collingswood Boro.	D, C*	L	L	CON	DOT	CC
7	US 30 from Lakeview Avenue to Cuthbert Boulevard (CR 636)	Oaklyn Boro., Haddon Twp.		M	M	SAFE, ED	DOT	MCD
8	US 30 at East Haddon Avenue/Clinton Avenue	Oaklyn Boro., Haddon Twp.		M	L	CON, MOB	DOT	MCD
9	Clinton Avenue at Railroad Underpass	Oaklyn Boro.		M	M	MOB	MCD	Railroad, CC
10	US 30 at Cuthbert Boulevard (CR 636)	Oaklyn Boro., Haddon Twp., Audubon Boro.	D	H	M	CON	DOT	CC
11	US 30 at Nicholson Road (CR 635)	Audubon Boro.	D	L	L	CON	DOT	MCD
12	Nicholson Road (CR 636) at Manor Ave./West Atlantic Ave. (CR 744)	Audubon Boro.	D	H	H	SAFE	CC	MCD, DOT
13	Crystal Lake Avenue (CR 643) at MacArthur Boulevard	Haddon Twp.		L	L	CON	CC	MCD
14	Haddon Avenue (CR 561) at Euclid Avenue and Tanner Street	Haddonfield Boro.	C*	L	L	CON	CC	MCD
15	Kings Highway (NJ 41) at PATCO Station Drive	Haddonfield Boro.	C*	M	L	CON, MOB	DOT	DRPA, MCD
16	US 30 at Station Avenue (CR 656)	Haddon Heights Boro.		L	L	CON	DOT	CC
17	Clements Bridge Road (NJ 41) at East Atlantic Avenue (CR 727)	Barrington Boro.		M	M	CON, MOB	DOT	CC
18	US 30 in the Vicinity of Copley Road (CR 666) and Bell Avenue	Barrington Boro.		H	M	CON, MOB	DOT	CC
19	Warwick Road (CR 669) in the Vicinity of I-295	Lawnside Boro.		M	L	CON, SAFE	CC	DOT, MCD
20	US 30 at Gloucester Road/Pike (CR 659)	Lawnside Boro.		M	M	CON, SAFE	CC	DOT
21	US 30 at Davis Road/Chapman Avenue	Magnolia Boro., Lawnside Boro.		L	L	SAFE	MCD	
22	US 30 at Ashland Avenue	Magnolia Boro.		M	L	SAFE	MCD	DOT
23	US 30 at Evesham Road (CR 544)	Magnolia Boro.		H	L	CON, SAFE	DOT	MCD, CC
24	US 30 at Somerdale Road (CR 678)	Somerdale Boro.		M	L	CON, SAFE	DOT	CC
25	US 30 in the Vicinity of Laurel Road/White Horse Road (CR 673)	Somerdale Boro., Stratford Boro., Lindenwold Boro.		H	H	CON	DOT	CC, MCD, DEV
26	White Horse Road (CR 673) at Station Avenue	Somerdale Boro., Lindenwold Boro.		L	L	MOB	CC	MCD
27	Park Ave. (CR 696) from W. Atlantic Ave. to E. Atlantic Ave. (CR 727)	Lindenwold Boro.		L	L	SAFE	CC	MCD
28	Gibbsboro Road (CR 686) from US 30 to White Horse Avenue	Clementon Boro.		L	L	SAFE	CC	MCD
29	US 30 at Gibbsboro Road (CR 686)	Clementon Boro., Lindenwold Boro.	C*	H	L	SAFE, CON	DOT	CC
30	US 30 in the Vicinity of Cross Keys Road (CR 689)/Milford Road	Berlin Boro.	C*	M	L	SAFE, CON	CC	DOT

TABLE 9: US 30 TRANSPORTATION IMPROVEMENTS IMPLEMENTATION MATRIX

Location		*Municipality*	*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
31	US 30 from Jackson Road (CR 534) to East Taunton Avenue	Berlin Boro.	C*	M	L	CON, SAFE	DOT	CC, MCD, DEV
32	US 30 Undeveloped Parcels in Berlin	Berlin Boro.	C*	L	L**	MOB, ED	MCD	DEV

Key:

Center/Distressed: D = Ranked in Municipal Distress Index Top 100 distressed municipalities; C = State Development and Redevelopment Plan designated center/corridor; C* = Identified as a center by county/municipality during cross-acceptance but not designated in SDRP.

Priority: H = High; M = Moderate; L = Low

Cost Range: H = High; M = Moderate; L = Low

Benefits: CON = Congestion; ED = Economic Development; MOB = Mobility; SAFE = Safety

Role: MCD = Municipality; CC = Camden County; DOT = NJ Department of Transportation; NJT = NJ Transit; DRPA = Delaware River Port Authority/PATCO; DEV = Developers

** An improvement scenario is identified which recommends conducting a study or further evaluation; the designation for the cost represents an expected cost for completion of the improvement at the location not just the study cost.

APPENDIX

A. Corridor Task Force Participants
B. Transportation Needs Inventory
C. *New Jersey Congestion Management System Report* - Camden to Berlin Subcorridor

A. US 30 CORRIDOR STUDY TASK FORCE PARTICIPANTS

Audubon Borough
Tim Stillman, Patrolman

Barrington Borough
George Preen, Chief of Police

Berlin Borough
Not represented

Berlin Township
Phyllis Magazzu, Council President
Charles Riebel, Jr., Kei Engineers

Camden City
Paul Redman, Director of Utilities
Edward Williams, Director Of Planning

Cherry Hill Township
Marge Matusow Della Vecchia

Clementon Borough
Honorable Frederick Busch, Mayor
Robert Getz, Chief of Police

Collingswood Borough
Brad Stokes, Administrator
Jim Robertson, Collingswood Partners

Haddonfield Borough
Richard Tsonis, Chief of Police

Haddon Heights Borough
Honorable Susan Griffith, Mayor
Ronald Shute, Chief of Police

Haddon Township
Joe Gallagher, Chief of Police

Hi-Nella Borough
Honorable Irene Wolick, Mayor

Lawnside Borough
Clarence Cannon, Zoning Officer
Floyd Catlett, Chief of Police
Jesse Harris, Administrator

Laurel Springs Borough
Al Cairns, Planning Board

Lindenwold Borough
Honorable Frank DeLucca, Mayor

Magnolia Borough
Anthony DePrince III, Councilman
Steve Pacella, Public Works
Lee Shields, Chief of Police

Oaklyn Borough
Chris Ferrari, Chief of Police
Robert Forbes, Councilman

Pennsauken Township
Bob Wagner, Director of Economic Dev.

Somerdale Borough
Anthony Campbell, Lieutenant
James Perry, Councilman

Stratford Borough
John Keenan, Administrator

Tavistock Borough
Honorable George Buss, Mayor

Vorhees Township
Joe Hale, Township Engineer

Woodlynne Borough
John Ragan, Chief of Police

B. US 30 Corridor Study Transportation Needs Inventory

ID#

A - Congestion Mitigation
B - Safety
C - Mobility
D - Operational Improvement
E - Maintenance
F - Transit / TDM
G - ITS

SOURCE:

DB - Transportation Improvement Program / NJ Subregion FY 2002-2004
S&D - NJ Study & Development Program FY 2002 - 2004
2025 - DVRPC Year 2025 Plan/Transportation Element, (P)-Project, (S)-Study
PIP - NJ Project Identification and Prioritization July 2002
CNA - NJDOT Rt. 73 Corridor Needs Assessment

A. CONGESTION MITIGATION

ID#	Route	Description (Municipality)	Source
A1	CR 673	CR 673 Improvements - NJ 168 to CR 674 (Various)	PIP#C009
A2	Proposed Rail Line	Camden Gloucester Rail Improvement - Construct light rail line from Camden City into Gloucester County. (Various)	PIP#C015
A3	NJ 73	NJ 73 Widening - Widen NJ 73 to a six-lane cross section between Cooper Road and the Berlin Circle. (Berlin Twp.)	CNA#LTN10

B. SAFETY

ID#	Route	Description	Source
B1	US 30	US 30 from West of Oak Avenue to East of Jefferson Avenue, proposed rehabilitation - Resurfacing and safety improvements (Lawnside Boro., Magnolia Boro.)	DB#X223
B2	US 30	US 30 at Clementon Road / Gibbsboro Road - Safety problem identified by NJDOT Safety Management System (Lindenwold Boro, Clementon Boro)	DB#95032

C. MOBILITY

ID#	Route	Description	Source
C1	US 130	US 130 from US 30 to NJ 73 - Corridor Study (Various)	2025(S)#D074
C2	Ben Franklin Bridge	Ben Franklin Bridge Walkway - Elimination of stairs. (Camden City)	2025(S)#B007
C3	US 30	Collingswood Circle (Phase A) - Provide for the removal of the existing Collingswood Circle at the intersection of Routes 30 and 130, consists of roadway, drainage, signalization, utility, landscape, and safety improvements as well as environmental cleanup. (Collingswood Boro, Woodlynne Boro.)	DB#155B 2025(P)#C012
C4	US 30 / US 130	Collingswood/Pennsauken (Phase B) - Provide for the construction of a new bridge to accommodate traffic on US 30 and US 130 eastbound and westbound at the Cooper River, as well as roadway, drainage, utility, landscape and safety improvements. (Collingswood Boro, Camden City, Pennsauken Twp.)	DB#155C

D. OPERATIONAL IMPROVEMENTS

ID#	Route	Description	Source
D1	Beckett Street Terminal	Various roadway and access improvements associated with the Beckett Street port facility. (Camden City)	PIP#C017a-I
D2	I-676	I-676 from Martin Luther King Boulevard to Newton Avenue, ramps and improvements - Operational improvements will widen the existing one-lane ramp from Martin Luther King Boulevard eastbound to I-676 southbound to a two-lane ramp. In addition, the project will create a left-turn lane on Martin Luther King Blvd. westbound to access the new two-lane ramp. Widening on I-676 is necessary to accommodate the increased length of the acceleration lane due to the two-lane on ramp. Structures on I-676 will need to be widened. (Camden City)	DB#9108
D3	US 30 NJ 73	Berlin Improvements - The Berlin Circle will be eliminated, and redistribution of vehicles will be made through a new network of signalized intersections. (Berlin Boro., Berlin Twp.)	DB#93109 2025 (P)#C013 CNA#ICN5,6
D4	Various	Camden Signal Upgrade - This program will provide new traffic signal control equipment and/or loops at various locations throughout the City of Camden. The construction will be phased over a four year period. (Camden City)	DB#D9803
D5	CR 604	Newton Avenue (CR 604) at 7th , Pine, and Line Streets - Intersection and traffic flow improvements. (Camden City)	PIP#C035
D6	NJ 38	NJ 38 from US 206 to US 130, intersection improvements (Various)	2025(P)#D093

D7	NJ 73	Median Closures, Cooper Folly Road to Fellowship Road - Project will provide for closure of selected median openings and/or construction of turn slots. Minor signal and intersection improvements also. (Berlin Twp., Voorhees Twp., Evesham Twp., Mount Laurel Twp.)	DB#94035

E. MAINTENANCE

ID#	Route	Description	Source
E1	CR 601	State Street Bridge - This project will provide for the replacement / rehabilitation of this off-system bridge. (Camden City)	DB#D95005
E2	CR 727	East Atlantic Avenue Over Peter's Creek - The existing bridge will be eliminated and replaced with a road embankment. (Oaklyn Boro, Audubon Boro.)	DB#D9904
E3	Various	Camden City, resurfacing - This program will provide for reconstruction and resurfacing of various streets in FY 2000, FY 2001, FY2002. (Camden City)	DB#D9913
E4	Maple Ave.	Bridge over NJ TRANSIT Atlantic City Line, replacement - The existing Maple Avenue Bridge over NJ TRANSIT will be replaced, including associated approach roadway work. The new structure will carry two 15-foot lanes and two 6-foot sidewalks. (Haddonfield Boro.)	DB#470
E5	US 30	Baird Boulevard, Drainage (a/k/a Admiral Wilson Blvd.) - This project will provide for proposed drainage improvements in the vicinity of Baird Boulevard to alleviate periodic flooding. Conditions noted include insufficient capacity in the existing drainage system; frequent flooding leading to closing of roadway. (Camden City).	DB#9377
E6	I-676	Southbound entrance ramp from Atlantic Avenue, proposed drainage improvements This proposed project will address an identified drainage problem, which results in frequent flooding. Conditions noted include a drainage system that discharges into Camden City combined sanitary and storm system which is overburdened and produces backwater conditions; deposits of sand and debris around inlet reduce capacity of drainage system. (Camden City)	DB#98392
E7	CR 673	CR 673 Laurel Rd., CR 706 to Lindenwold Boro - Resurfacing needed due to poor pavement conditions. (Stratford Boro, Lindenwold Boro)	PIP#C043
E8	CR 699	U.S. Avenue NJ Transit Bridge, proposed bridge replacement. (Lindenwold Boro)	DB#98518
E9	CR 561	Haddonfield-Berlin Road - This project will address drainage improvements on Haddonfield-Berlin Road, Milford Road, Route 30, Berlin Circle (Berlin Twp., Berlin Boro.)	DB#D95081
E10	CR 536 Spur	CR 536 Spur, US 30 to New Freedom Rd. - Resurfacing needed due to poor pavement conditions. (Berlin Boro)	PIP#C051
E11	CR 727	CR 727 Atlantic Avenue, NJ 41 to NJ TPK - Resurfacing needed due to poor pavement conditions. (Haddon Twp., Barrington Boro.)	PIP#C052
E12	Flanders Ave.	Flanders Avenue Bridge (Ramp) - US 30 & CR 537 - Resurfacing needed due to poor pavement conditions. (Camden City)	PIP#C055

E13	I-295	I-295 over Clements Bridge Road (CR573), bridge deck replacement. (Barrington Boro.)	PIP#C095

F. TRANSIT / TDM

ID#	Route	Description	Source
F1	PATCO	PATCO Stations - Install Trailblazers on connector routes. Camden City (Ferry Avenue Station), Haddonfield Boro, HaddonTwp. (Westmont Station)	PIP#C045 PIP#C046 PIP#C047
F2	Aerial Tram	New Delaware River Aerial Tram (Camden City, Philadelphia City)	2025(P)#B004
F3	Proposed Rail Line	Cape May Seashore Line Lindenwold to Cape May - Restoration of service. (Various)	2025(S)#A028
F4	SNJLRT	Southern NJ LRT from Camden to Glassboro (Camden City)	2025(P)#A020 PIP#C015
F5	SNJLRT	Southern New Jersey Light Rail Transit System - This phase of the program will provide funding for payment to the DBOM (design, build, operate, maintain) contractor, property acquisition for the 34-mile initial operating segment between Camden and Trenton. (Various)	DB#T107 2025(P)#A007
F6	Atlantic City Rail Line	Construct station with parking. (Pennsauken Twp.)	PIP#C016

G. ITS

ID#	Route	Description	Source
G1		PRIMIS - Regional ITS (NJ) - Traffic Operations Centers Incident Management System (Various)	2025(P)#A027

C. NEW JERSEY CONGESTION MANAGEMENT SYSTEM REPORT CORRIDOR 8: BERLIN TO CAMDEN CORRIDOR SUMMARY

This corridor runs in a generally north-south direction through the heart of Camden County. The primary facility carrying traffic through this corridor is US 30. Three distinct subcorridors have been identified. Subcorridor A: Berlin, Subcorridor B: Vorhees/Lindenwold/Haddonfield and Subcorridor C: Camden.

SUBCORRIDOR A: BERLIN

LAND USE - Pockets of residential development are scattered throughout Berlin Borough. US 30 functions as a "main street" type commercial district in the center of Berlin Borough and recently several large shopping areas have been built along NJ 73. Despite this development, a significant amount of undeveloped land still exists in agricultural and wooded uses.

HIGHWAY FACILITIES - US 30 and NJ 73 are the primary highway facilities carrying traffic through this section of the corridor. US 30 is a two-lane by direction arterial with numerous curb cuts and traffic signals. Within the borough's commercial area, one travel lane in each direction is converted to on-street parking. NJ 73 also provides two travel lanes in each direction but is separated by a grass median. A new grade separated interchange was recently constructed for US 30 and NJ 73. CR 561, a two lane road, also serves traffic flow along the corridor. CR 686, CR 534, CR 689 and CR 536 Spur are the primary facilities carrying traffic into or across this subcorridor.

TRANSIT FACILITIES - New Jersey Transit's Atlantic City Rail Line runs generally parallel to US 30 with a station stop in Atco, adjacent to the US 30/NJ 73 interchange. This line provides service between Atlantic City and Philadelphia. Bus service in this subcorridor is limited to one line which runs from Lindenwold to Atlantic City. Although this route passes the Atco rail station, there is no connection provided between the bus and rail line.

TRAFFIC CONGESTION - Congested conditions are centered around Berlin's business district and the Berlin Circle. Roads radiating from Berlin, such as NJ 73, CR 689 and CR 561, are also congested. CR 683 is congested for its entire length through the subcorridor.

IMPROVEMENT STRATEGIES - Intersection improvements/widenings, traffic signal improvements and parking management strategies are very practical for the Berlin business district. Roadway widening is considered to be a very practical strategy for the Berlin Circle area and for CR 689. Access management strategies are considered to be very practical for the commercial area along NJ 73 and along CR 689. Coordination of transit service between the Atco rail station and bus service as well as enhancements of transit service in the subcorridor are also considered very practical.

SUBCORRIDOR B: VOORHEES/LINDENWOLD/HADDONFIELD

LAND USE - This section of the corridor is densely developed and is dominated by single family residential units. Strip commercial development is typical along US 30 and along Haddon Avenue (CR 561). Concentrated commercial development can be found in the Echelon Mall Area and downtown Haddonfield.

HIGHWAY FACILITIES - US 30 and CR 561 run parallel to each other and serve as the primary facilities carrying traffic along this section of the corridor. US 30 provides two travel lanes by direction with numerous curb cuts and frequent traffic signals. Left turn lanes are typically not available along this section of US 30. CR 561 provides two travel lanes in each direction from Gibbsboro to Haddonfield and one lane by direction for the remainder of the subcorridor. I-295 cuts across this subcorridor and has interchanges with CR 561, PATCO's Woodcrest Station and US 30. The New Jersey Turnpike also traverses the corridor but there are no interchanges in the area. Other major cross-corridor roads include: CR 673, CR 544, CR 669, NJ 41 and CR 644.

TRANSIT FACILITIES - New Jersey Transit's Atlantic City Rail Line runs on an adjacent track within the same right-of-way as PATCO's High Speed Line through much of this subcorridor. The New Jersey Transit line shares a station with PATCO at Lindenwold then diverges near Haddonfield and provides a station adjacent to the Garden State Park Race Track. The PATCO line, providing service between Lindenwold and Philadelphia, is generally centered between US 30 and CR 561 from Lindenwold to Haddonfield. The line then runs adjacent to CR 561 from Haddonfield to Camden. Within this subcorridor, the PATCO line provides five stations (Lindenwold, Ashland, Woodcrest, Haddonfield and Westmont). New Jersey Transit provides bus service along the corridor primarily on US 30 and CR 561. Other bus service across the corridor is available on CR 673, NJ 41 and CR 669. There is no bus service available to the Woodcrest or Ashland PATCO stations.

TRAFFIC CONGESTION - Weaving movements, incidents and high truck volumes contribute to the congested conditions on I-295 from CR 561 to the subcorridor limits. US 30 is congested for its entire length through the subcorridor primarily due to the following factors: adjacent commercial development, excessive curb cuts, lack of turning lanes, traffic signal timing and lane reductions. CR 561 is congested from CR 673 to the northern end of the subcorridor largely because of the same factors. Congestion on CR 669 is mainly a result of roadside development, turning movements and intersection deficiencies. Facilities crossing the corridor such as NJ 41, CR 544, CR 678, CR 673 and CR 644 experience congestion due to many of the same factors.

IMPROVEMENT STRATEGIES - Mode shift and Transportation Demand Management are considered to be very practical strategies to address the congestion in this subcorridor. Access management and traffic signal system improvements are also considered very practical. Because the parking lots at PATCO stations are at capacity, increased bus service to the stations and parking lot expansions are considered very practical.

SUBCORRIDOR C: CAMDEN

LAND USE - The land use adjacent to highways such as US 30, US 130, NJ 38 and NJ 70 in this subcorridor is primarily commercial strip development. Downtown Camden is a mix of residential, institutional and commercial uses. Densely developed residential areas can be found spread throughout this subcorridor and industrial uses are common along the waterfront.

HIGHWAY FACILITIES - I-676, US 130 and the Admiral Wilson Boulevard (US 30) are the primary facilities in this subcorridor and all carry three travel lanes in each direction. I-676 is a limited access facility while US 130 and the Admiral Wilson Boulevard are both controlled access highways which are divided by a concrete barrier with left turns and U-turns accommodated through a series of jughandles. I-676 and the Admiral Wilson Boulevard provide direct access to Pennsylvania via the Ben Franklin Bridge. US 30 east of US 130 is a two lane arterial. NJ 38, NJ 70, CR 551, CR 561, State Street, Federal Street and Westfield Avenue all serve as radial routes emanating from Camden.

TRANSIT FACILITIES - This subcorridor has excellent accessibility to bus service. US 30, US 130, CR 551, CR 561, CR 605, CR 537 Cooper Street and Market Street are all served by multiple bus routes. The Rand Transportation Center is located in Camden on CR 551 and provides connections between the bus routes and the PATCO High-Speed Line. New Jersey Transit is evaluating the potential to initiate light rail passenger service along the Bordentown Secondary Line which would also interchange at the Rand Transportation Center.

TRAFFIC CONGESTION - Within this subcorridor, US 130 is congested from the corridor limit to its intersection with the White Horse Pike (US 30). Intense roadside development, frequent signalized intersections, heavy through volumes and significant truck traffic are the major contributors to this congestion.

IMPROVEMENT STRATEGIES - The concentration of employment in downtown Camden and the accessibility of transit service make mode shift strategies such as carpool/vanpool programs, transit marketing and transit first policies very practical strategies for addressing congestion. Alternative work hours, parking management and transit enhancements are also considered very practical strategies. The Ben Franklin Bridge, the Admiral Wilson Boulevard and I-676 would benefit from strategies such as automated toll collection, advanced traveler information services and other incident management strategies.

US 30 CORRIDOR STUDY

Publication No.: 02028

Date Published: July 2002

Geographic Area Covered: Audubon Borough, Barrington Borough, Berlin Borough, Berlin Township, Camden City, Cherry Hill Township, Clementon Borough, Collingswood Borough, Haddonfield Borough, Haddon Heights Borough, Haddon Township, Hi-Nella Borough, Lawnside Borough, Laurel Springs Borough, Lindenwold Borough, Magnolia Borough, Oaklyn Borough, Pennsauken Township, Somerdale Borough, Stratford Borough, Tavistock Borough, Voorhees Township, and Woodlynne Borough

Key Words: corridor study, transportation problem locations, improvement scenarios, project priorities, project benefits, implementation plan

ABSTRACT: This document presents a transportation improvement plan for the US 30 Corridor in Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case US 30 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention and who is responsible to get these projects moving to the next step.

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