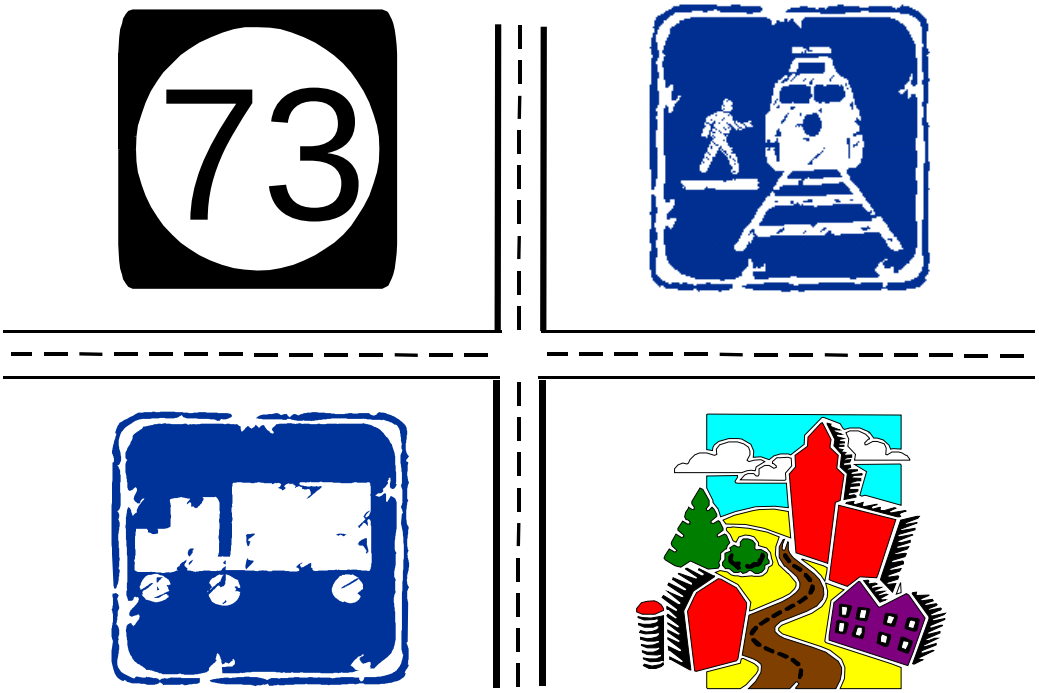
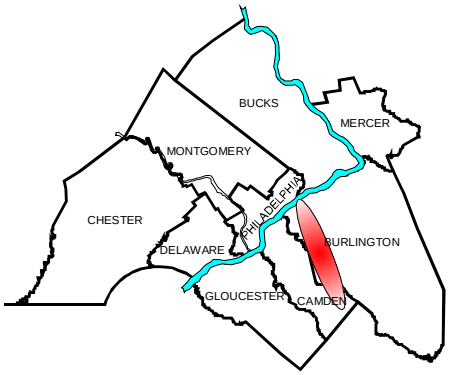


NJ 73 Corridor Study



YEAR 2020 PLANNING CORRIDORS
REPORT 4

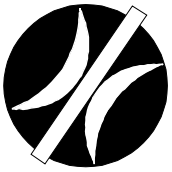
DELAWARE VALLEY REGIONAL PLANNING COMMISSION

NJ 73 CORRIDOR STUDY
BURLINGTON AND CAMDEN COUNTIES

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

August 2000

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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INTRODUCTION

This document presents a transportation improvement plan for the NJ 73 Corridor in Burlington County and Camden County (Figure 1). The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case NJ 73 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. The transportation problem locations identified through the planning process are presented in Table 1.

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 14 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 Appendix A. Specifically, the municipalities included in the corridor are: Berlin Borough, Berlin Township, Cherry Hill Township, Chesilhurst Borough, Cinnaminson Township, Evesham Township, Maple Shade Township, Moorestown Township, Mount Laurel Township, Palmyra Borough, Pennsauken Township, Voorhees Township and Winslow Township (Figure 2).

A description of the existing conditions, identified problems and potential improvement scenarios for each location is presented along with schematic figures and photographs. Each improvement scenario has been discussed with the study stakeholders 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.

Following the presentation of the 26 transportation problem locations identified through this process, this document also lists, in Table 4, those problem locations in the corridor which have been previously identified and are either programmed for implementation on DVRPC's FY 2001 - 2004 Transportation Improvement Program (TIP), listed on NJ DOT's FY 2001-2002 Study and Development Program, identified on DVRPC's Non-Pipeline Transportation Problems, identified as part of DVRPC's Long Range Plan (LRP) or identified in NJ DOT's 1994 Corridor Needs Assessment Study. By including these projects, this corridor plan becomes as comprehensive as possible in identifying the transportation needs of the corridor.

TABLE 1
Corridor Project Locations

Berlin Boro	• US 30 and Milford Road • US 30: Jackson Road to East Taunton Avenue • Berlin Undeveloped Parcels on US 30
Berlin Twp	• NJ 73: Franklin Avenue to D'Angelo Drive
Cherry Hill Twp	• NJ 70: Springdale Road to Wexford Drive • NJ 70: I-295 to Covered Bridge Road/frontage Road
Chesilhurst Boro	• US 30: Garfield Avenue to Center Avenue
Cinnaminson Twp	• US 130: Cinnaminson Avenue to Riverton Road • Fork Landing Road
Evesham Twp	• NJ 73 at Lincoln Drive • NJ 73 at Greentree Road • NJ 73 at Brick Road • NJ 73: Evesham Road/Marlton Parkway to Brick Road • NJ 73 at Dutch Road, Commonwealth Drive • NJ 73 at Kresson Road/Braddock Mill Road
Maple Shade Twp	• NJ 73: Main Street to Fox Meadow • NJ 73: I-295 to Collins Avenue
Moorestown Twp	• Lenola Road at Camden Avenue and at New Albany Road
Mount Laurel Twp	• NJ 73: I-295 to Collins Avenue • NJ 73: I-295 to Atrium Way
Palmyra Boro	• NJ 73 at Souder Street • NJ 73 Northbound at Broad Street
Pennsauken Twp	• River Road : NJ 73 to Sherman Avenue • Pennsauken Commercial/industrial Area Access
Voorhees Twp	• NJ 73 at Signal Hill Drive • NJ 73 at Kresson Road/Braddock Mill Road
Winslow Twp	• Taunton Road: NJ 73 Ramps to Tansboro Road • NJ 73:at Hayes Mill Road/Factory Road • NJ 73: Pump Branch Road to New Brooklyn Cedarbrook Road

Figure 1 :
NJ 73 CORRIDOR STUDY
Regional Map

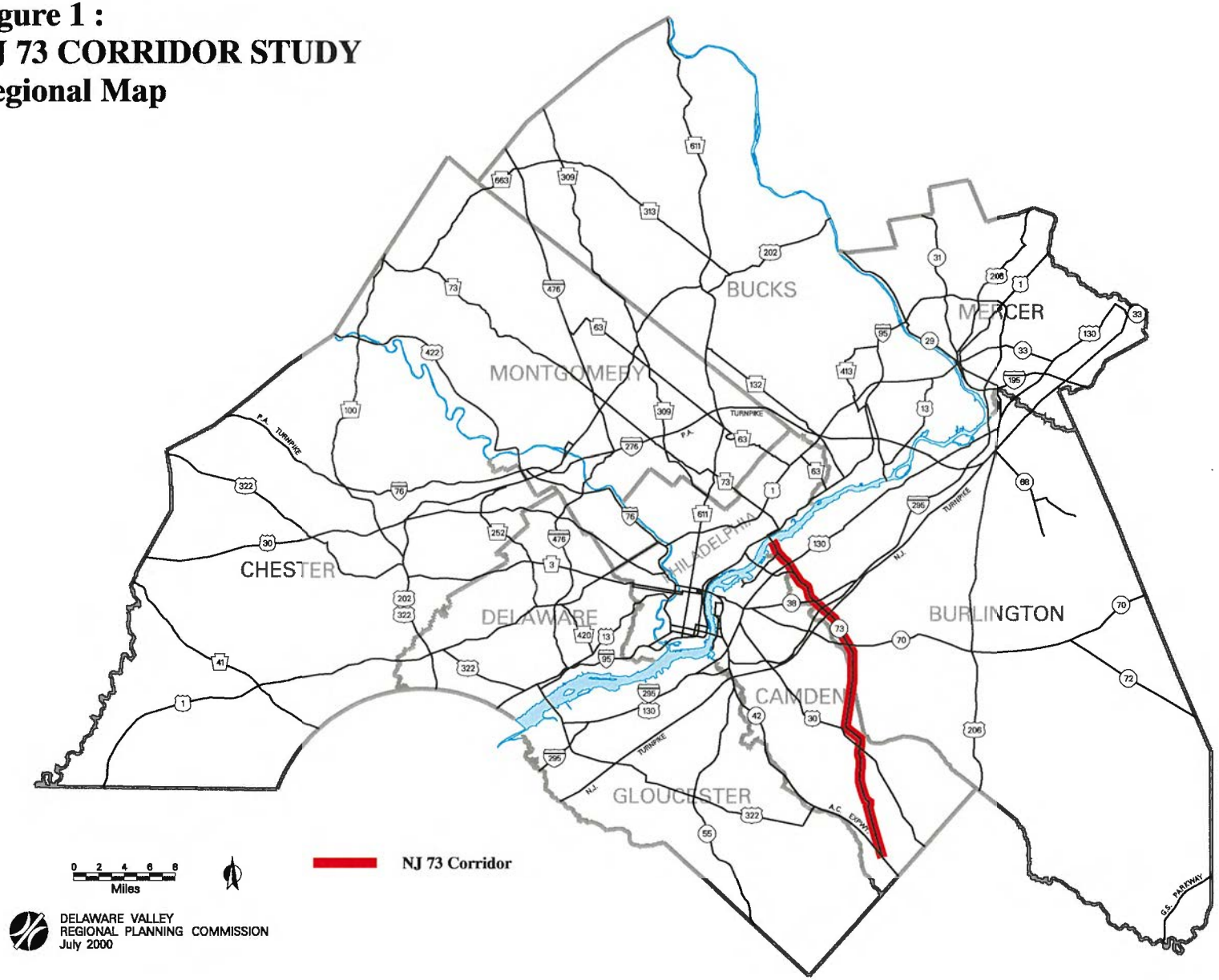
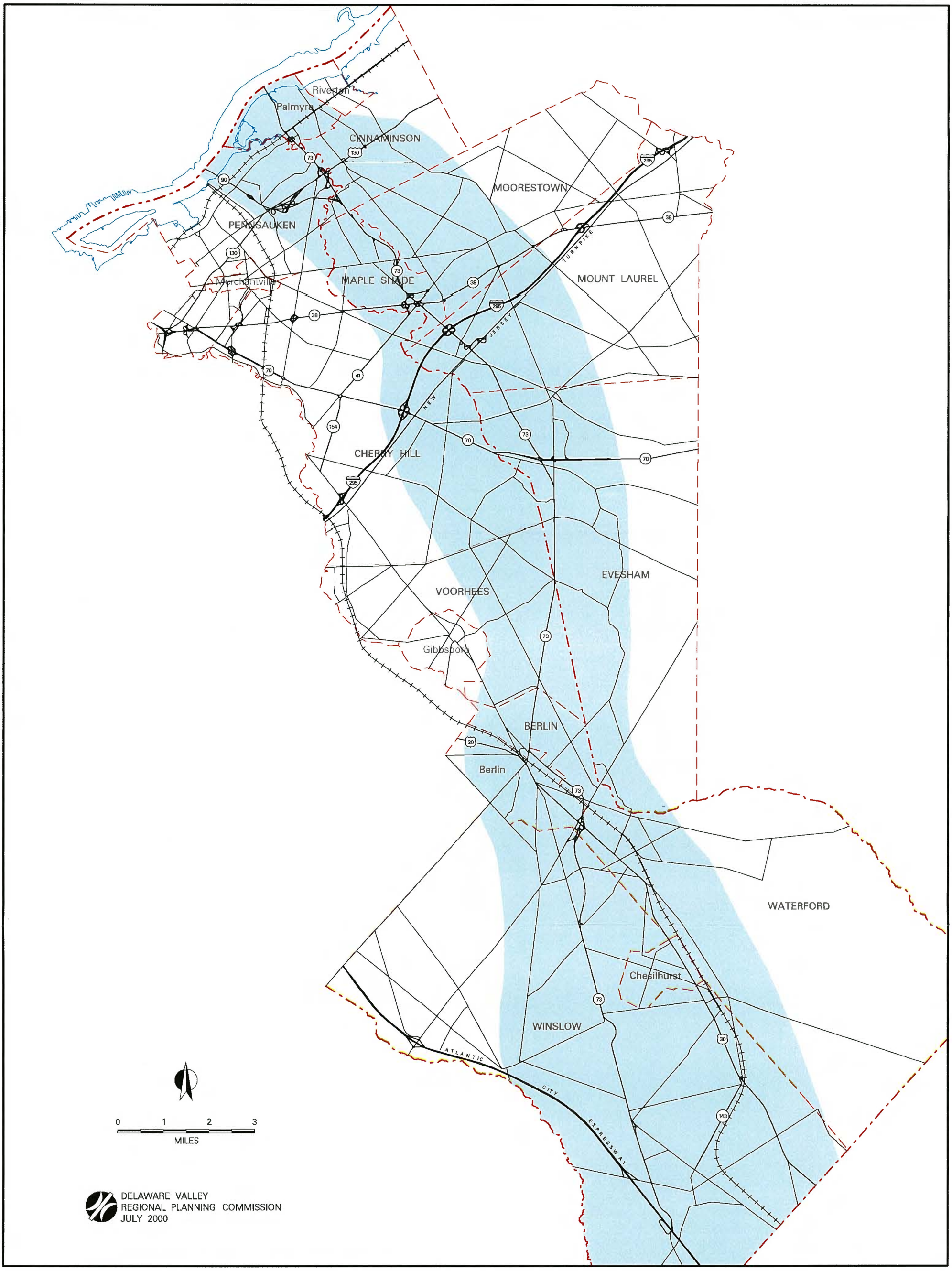


Figure 2
NJ 73 Corridor
Study Area



BACKGROUND

Regional Setting

The corridor runs in a southeasterly direction through Burlington and Camden Counties from the Tacony-Palmyra Bridge to the Atlantic City Expressway. It provides direct access to Philadelphia and serves as a connecting facility for traffic en route to points along the New Jersey shore. NJ 73 stretches approximately 28 miles and connects 14 municipalities in both Burlington and Camden Counties.

NJ 73 is the primary highway facility carrying traffic within this corridor. The number designation 73 continues on the Pennsylvania side of the Tacony-Palmyra Bridge as PA 73 where it provides access to I-95. NJ 73 also intersects two major east-west facilities, NJ 70 and NJ 38. NJ 90 also connects with NJ 73 near it's northern terminus and provides access to the Betsy Ross Bridge into Philadelphia. In addition, NJ 73 also connects with I-295 at Exit 36 and the New Jersey Turnpike at Exit 4, both of which are limited access highways that run generally north/south and provide access to New York City to the north and Wilmington/Baltimore to the south. Other connecting routes include US 130 in the northern end and US 30 in the southern end.

NJ 73 carries two lanes in each direction for most of its entire 28 mile length. Left turns are accommodated by a combination of center left turn lanes and jughandles. Because this is a divided highway, adjacent land uses access NJ 73 by right-in/right-out movements. Two traffic circles are still in use along NJ 73, one in Berlin Borough where CR 689 and CR 708 meet NJ 73, and the other at the junction of NJ 70 and NJ 73 in Marlton. Due to increases in traffic volumes along NJ 73, operations at these circles frequently break down and congestion and safety problems exist. New Jersey DOT has eliminated several traffic circles in South Jersey over the past decade and has programmed both the Berlin Circle (TIP/DB # 2347) and Marlton Circle (TIP/DB # 567) elimination projects on the FY 2001-2004 Transportation Improvement Program (TIP).

The NJ 73 corridor is densely developed with primarily commercial uses on it's northern end through its upper mid section then gradually becomes less dense toward its southern end. This pattern follows the trend of suburban sprawl in the region, movement away from the city into the farmland areas. Congestion has recently become a very significant issue due to the mixing of both local shopping traffic and through trips. This problem is exacerbated by the numerous ingress and egress points of businesses located along NJ 73. There are two significant trip generating regional shopping complexes accessing NJ 73, the Moorestown Mall and the Eastgate Shopping Center.

Eastgate is particularly important because a southbound I-295 off-ramp empties into this shopping center. Thus, any of this traffic intending to connect with NJ 73 northbound must first travel through the shopping center before reaching NJ 73. Another concern is the presence of grass medians on some portions of the facility which prohibit direct crossing of the highway. In some areas there are breaks in the median to allow vehicles to cross or make u-turns. These areas are many times not officially designated, appropriately signed, or striped. In addition they don't provide enough space for a driver to safely position his vehicle while waiting for an opportunity to cross. Rarely can any of these openings accommodate more than one vehicle and they can be especially problematic when vehicles heading in opposite directions attempt to utilize these openings. Some of these situations are examined more closely later in this study.

The corridor does not currently have freight or passenger rail service. The Southern New Jersey Light Rail Transportation System is a NJ Transit project which when completed will provide transit service via light rail along the Delaware River Between Camden and Trenton. Two stations are proposed in this corridor. A station with an 800 car parking facility is planned for River Road near the junction of NJ 73 in Pennsauken Township. The other station is planned along Broad Street in Palmyra with a planned parking facility for 25 vehicles.

Demographics

The 1990 US Bureau of the Census population count for Camden County was 502,824 and 396,066 for Burlington County. The total 1990 population for the 14 municipalities of the study area was 304,881 people. Thus, the corridor municipalities represented 34% of the 898,890 total population for Camden and Burlington counties combined. Two of the top three most populated municipalities in Burlington County, Mt. Laurel(30,270) and Evesham Twps.(35,309), are located within the study area. In Camden County the study area includes Cherry Hill(69,348), Pennsauken(34,738), and Voorhees Twps.(24, 559). which are the county's second, fourth, and fifth most populated municipalities respectively.

NJ 73 serves a large and growing population base. Looking at the 14 municipalities of the corridor as a whole, population is projected to grow by 34.7% by the year 2020 according to DVRPC's population forecasts. This is almost double the rate of growth projected for Camden(17.1%) and Burlington(19.2%) Counties for the same period. According to DVRPC population estimates, Mt. Laurel, Winslow, and Evesham Townships experienced an estimated double digit growth in population between 1990 and 1997 of 21.6%, 13.6%, and 11.6% respectively. Although the current growth is concentrated in the central part of the study area, the

trend of suburban sprawl continues away from the Philadelphia metropolitan area into the less developed southern portion of the corridor. DVRPC expects the greatest population increases for the year 2020 within the corridor to occur in Waterford(93.3%), Winslow(69.6%), and Voorhees Townships(63.5%).

Concerning population density, the US Bureau of the Census figures for 1990 indicate that Maple Shade Township is the most densely populated municipality within the corridor at 7.8 persons per acre. This number is much greater than the densities of both Burlington and Camden Counties which are 0.75 and 3.4 persons per acre respectively. The 14 municipalities of the study area have an average density of 2.9 persons per acre. The population densities of the corridor municipalities are consistent with it's development pattern being more densely populated in the northern section and gradually becoming less developed to the south and east. This is evident in both Waterford and Winslow Townships, the two southernmost municipalities, where the population density was less than one person per acre according to 1990 Census figures.

DVRPC's Year 2020 employment forecasts indicate the 14 corridor municipalities averaged 27.2% growth, which is consistent with Burlington County (27.7%) and considerably ahead of Camden County (16.1%). Evesham Twp. is projected to experience the greatest percentage increase at 46.5%. Cherry Hill Township is expected to see the greatest number of jobs added by 2020 at 57,259. Other employment leaders were Voorhees, Mt. Laurel, Waterford, and Winslow Townships at 45.0%, 44.3%, 43.3%, and 41.2%, respectively. An increase in employment of greater than 5.0% was forecasted for all but one of the municipalities within the corridor.

Land Use

Land use varies throughout the corridor. The northern portion is by far the most densely developed area of the corridor. The central portion is experiencing burgeoning residential, office, and retail growth. The southern portion, while still relatively undeveloped, is beginning to experience residential and employment growth. Mount Laurel, Evesham, and Voorhees Townships, located in the central portion of the corridor, consist mainly of new residential developments and newer strip commercial developments which are located primarily along NJ 73. Many small older commercial downtowns still exist throughout the corridor including those in Pennsauken, Maple Shade, and Moorestown Townships, and Berlin Borough. Retail is centered primarily near or along NJ 73 consistently throughout the corridor.

According to DVRPC's 1990 Land Use Information, the primary developed land use within

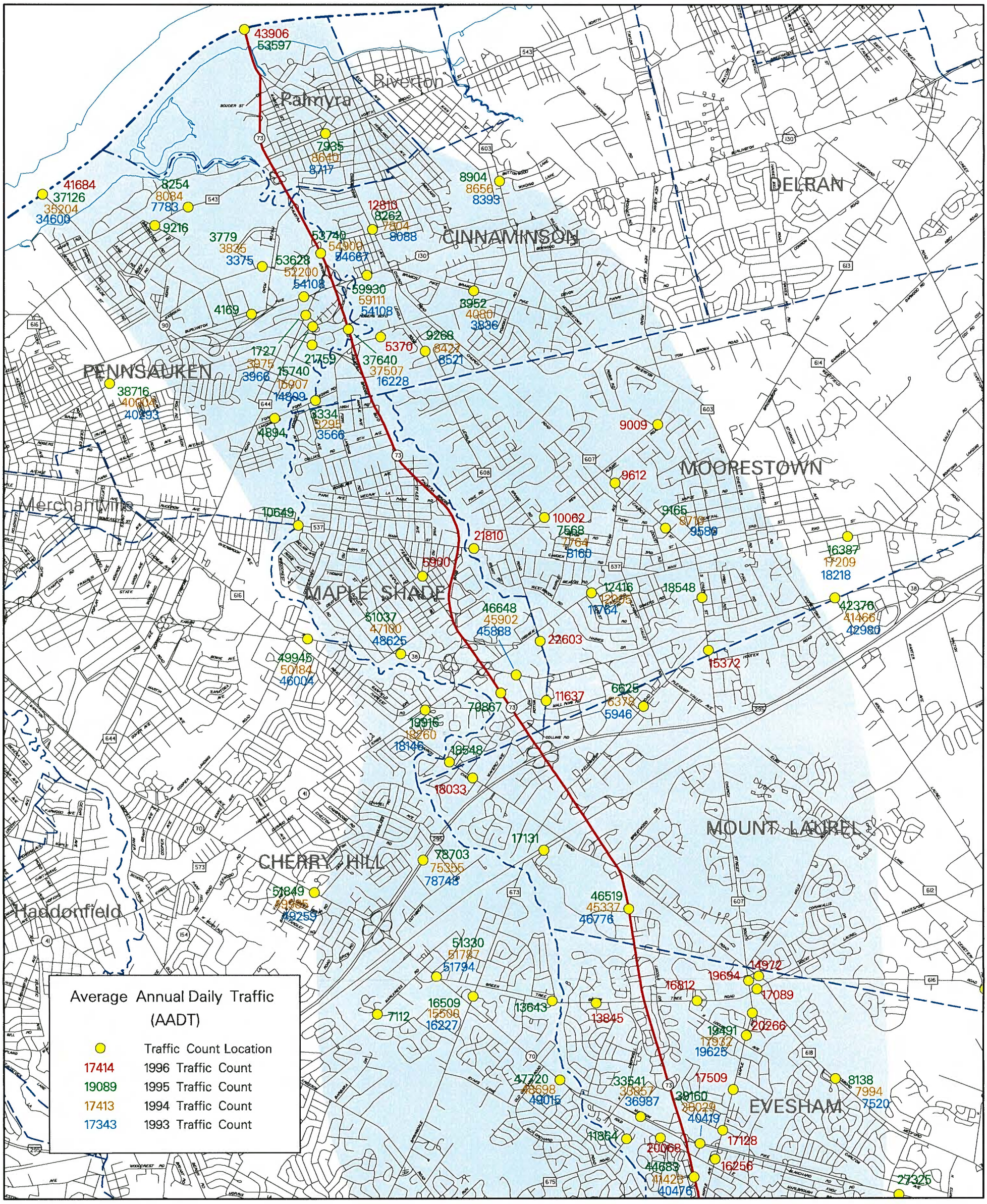
the corridor is single-family residential which accounts for 18% of the corridor's land area. Commercial uses constitute 6% of the land area. The majority of the corridor is undeveloped with 38% of the land area wooded and 14% in agricultural use. The undeveloped land is located primarily in Mount Laurel, Evesham, Waterford, and Winslow Townships. The corridor benefits from a well connected highway infrastructure which makes it ideal for development. Currently there is a growth spurt taking place in Mount Laurel Township in the vicinity of the NJ 73 and I-295 interchange.

Traffic Volumes

The traffic volumes along NJ 73 vary throughout the corridor. At the corridor's northern terminus, the 1996 average annual daily traffic (AADT) volume recorded on NJ 73 in the vicinity of the Tacony Palmyra bridge was 43,906 and an AADT of 41,684 was recorded on NJ 90 in the vicinity of the Betsy Ross bridge. The highest volume recorded on NJ 73 as of 1995 was 70,867 just south of NJ 38. From this point, traffic volumes generally decrease as one moves south through the corridor. South of US 30 volumes along NJ 73 drop off considerably. An AADT of 19,697 was recorded in 1995 just south of US 30. AADT's continue to decrease as you move toward the Atlantic City Expressway where 10,230 vehicles were recorded just before the expressway on-ramp in 1995.

During 1995, US 130, experienced daily traffic volumes of 53,628 at a location south of NJ 73 and 59,930 north of NJ 73. A 1995 AADT of 51,037 was recorded on NJ 38 in Maple Shade Township just west of NJ 73 and an AADT of 46,648 was recorded on NJ 38 east of NJ 73. An AADT volume of 78,703 was recorded on I-295 in Cherry Hill Township just south of it's interchange with NJ 73. On NJ 70, an AADT of 39,160 was recorded east of NJ 73 and 33,541 west of NJ 73. These volumes and others located in the corridor which were collected by DVRPC are presented in Figures 3a, 3b and 3c.

Figure 3A
NJ 73 Corridor Study Section A
Traffic Volumes



Average Annual Daily Traffic (AADT)

- Traffic Count Location
- 17414 — 1996 Traffic Count
- 19089 — 1995 Traffic Count
- 17413 — 1994 Traffic Count
- 17343 — 1993 Traffic Count

0 .5 1 1.5
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2000

Figure 3B
NJ 73 Corridor Study Section B
Traffic Volumes

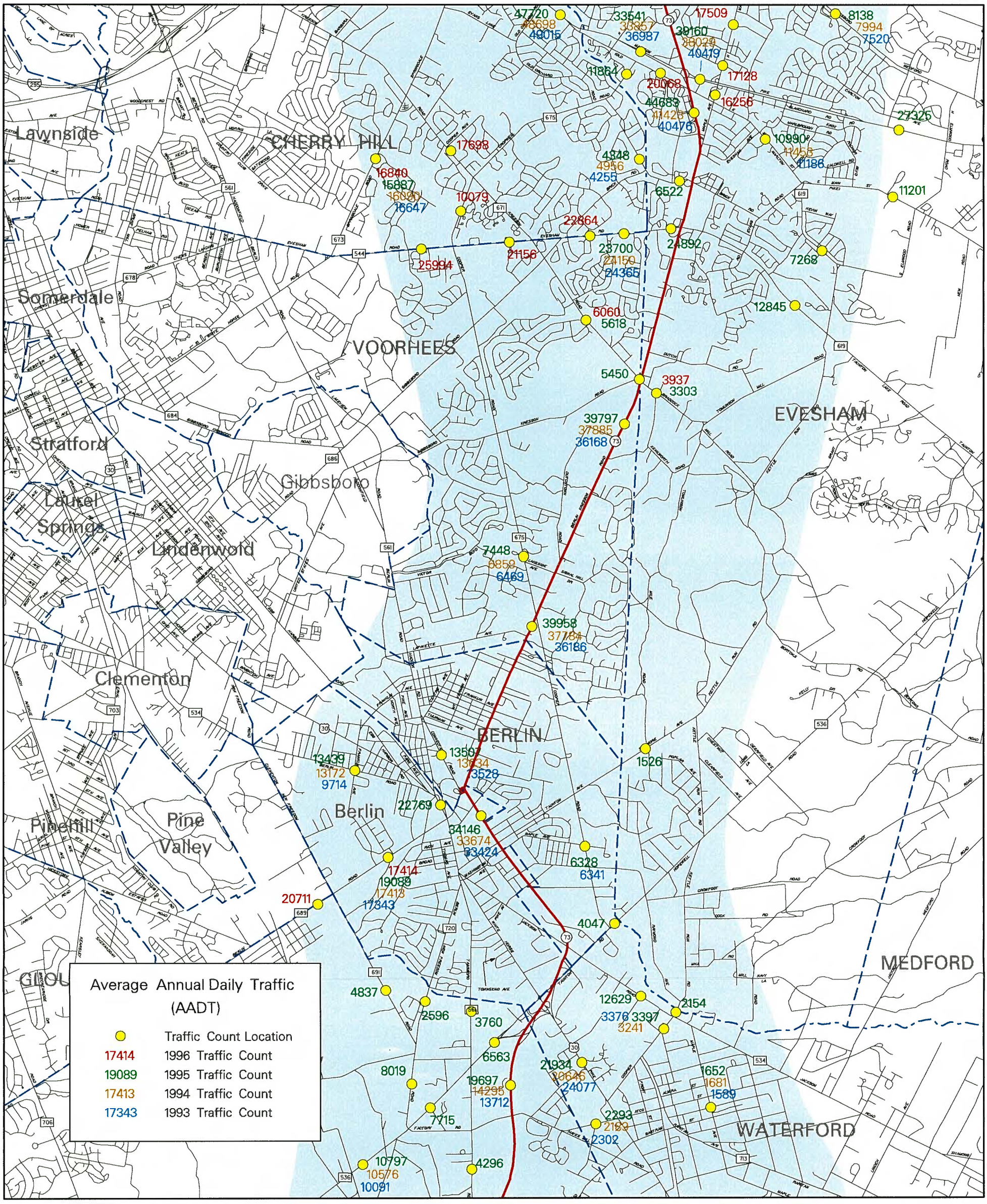
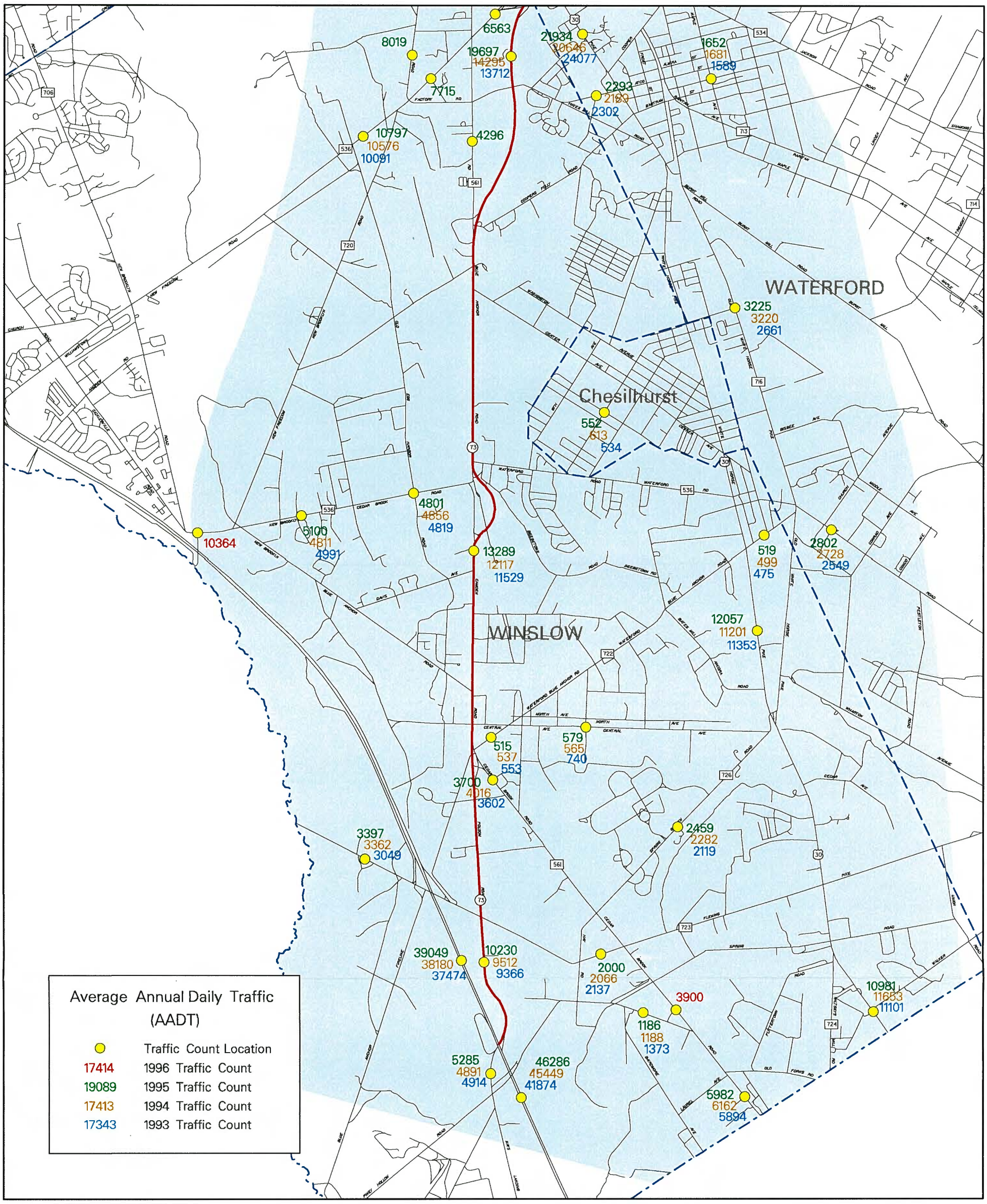


Figure 3C
NJ 73 Corridor Study Section C
Traffic Volumes



TRANSIT/BICYCLE OPPORTUNITIES

Bus Routes

Bus routes are currently the sole mode of transit in the corridor. There are several New Jersey Transit bus routes providing service within the NJ 73 corridor. However, they generally traverse and/or provide limited service along NJ 73 but do not travel extensively along NJ 73. The nine routes providing service within the corridor are described below.

Route 317 - Philadelphia to Asbury Park – Provides seven-days-a-week service every two hours between Philadelphia and Asbury Park. The 3 hour and 40 minute trip operates primarily on NJ 38 within the study area and serves Camden, Cherry Hill, Mt. Laurel, Mt. Holly, as well as Fort Dix and McGuire Air Force Base.

Route 406 - Philadelphia to Medford Lakes – Peak headways are 10 to 30 minutes and off-peak service is 15-40 minutes on this route which travels mostly on NJ 70. There is weekend service. Operating time between Philadelphia and Marlton is approximately 1 hour and 25 minutes with an additional 20 minutes to Medford Lakes. There are several limited service portions of this route with the majority of runs terminating at Marlton.

Route 407 - Philadelphia to Moorestown Mall via Merchantville – This route, which travels on CR 537 through Merchantville and Moorestown before heading to NJ 38 and the Moorestown Mall, runs seven days a week. Peak headways are 15-30 minutes and off-peak headways are 40 minutes. A one-way trip takes approximately one hour.

Route 409 - Philadelphia to Trenton – Utilizing US 130, this route runs seven days a week. There are 15-30 minute peak headways and 30 minutes off-peak. The route serves Pennsauken, Cinnaminson, Delran, Willingboro, Burlington, Roebling, Bordentown and Trenton. There is limited service to Mt. Holly and several runs terminate at Burlington. Additionally some runs operate as express service. The proposed light rail line will closely parallel this route.

Route 413 - Philadelphia to Mt. Holly/Burlington – This route provides 30 minute peak period service to Mt. Holly and 60 minute peak period service to Burlington. Off peak headway is 60 minutes for both Burlington and Mt. Holly. The route has several limited service portions. Service between Philadelphia and Burlington takes approximately an hour and

a half while service to Mt. Holly takes approximately one hour. Weekend service is provided. This route travels on NJ 38/Kings Highway and CR 537 within the study area.

Route 419 - Philadelphia to Burlington/Riverside via River Road – This route provides service to the communities along the Delaware River. Primarily using River Road, this route parallels the proposed New jersey Transit light rail line. Communities served included Pennsauken, Cinnaminson, Palmyra, Riverside, Beverly, and Burlington. Limited service is provided to the Burlington Center Mall. Travel time between Philadelphia and Burlington City is approximately one hour. Hourly weekend service is also run.

Route 451 - Camden to Echelon Mall – This route operates predominantly on Haddon Avenue and Haddonfield-Berlin Road at 60 minute headways for both peak and off-peak service. No weekend service is provided. Travel time is approximately one hour.

Route 457 - Camden to Moorestown Mall – Peak hour headways on this route is 30 minutes and of-peak headway is 2 hours. Travel time on the route is approximately one hour and 20 minutes. There is no Sunday service on this route. Communities served by this route include Camden, Gloucester City, Mt. Ephraim, Audubon, Haddonfield, Cherry Hill, Mt. Laurel. Limited service is provided to the Eastgate Industrial Center. Within the study area the bus utilizes Kings Highway, Church Road and Fellowship Road.

Route 554 - Lindenwold to Atlantic City – This route provides daily bus service between the Lindenwold PATCO station and the Atlantic City Bus Terminal. The trip takes approximately one hour and 40 minutes. This route does provide limited service to Absecon. Peak hour headways range from 30 to 60 minutes while off-peak headway is 60 minutes. The bus travels on US 30 for the majority of the trip and serves Berlin, Atco and Hammonton.

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 six bikes may be carried in these compartments on the right side of the bus, when traveling to or from stops along streets and highways. Up to six additional bikes may be stowed in the left side compartments, but loading and unloading are permitted only at bus terminals.

Bicycle accommodation 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 5 minutes. In the same amount of time, an average bicyclist, however can travel approximately one mile. Buses which accommodate bikes allow transit patrons to use their bikes at both trip ends. Use of NJ Transit's "Rack 'n' Roll" service is expected to grow significantly during the next year in the corridor, bringing an increase in bicycle traffic on corridor roadways.

Rail Transit

New Jersey Transit's proposed light rail line between Camden and Trenton will parallel US 130 and traverse NJ 73 at the northern edge of the corridor. This line will utilize the Bordentown Secondary Line and cover 34 miles between the Waterfront Entertainment Center in Camden and the Trenton train station. The service will link communities in Mercer, Burlington and Camden counties and provide direct linkages to PATCO, SEPTA, AMTRAK and NJ Transit bus routes. NJ Transit is currently exploring the feasibility of extending the line to the State House complex. There will be two stations located within the corridor. One station will be located along River Road, just south of NJ 73, in Pennsauken. This station will include a park and ride lot for approximately 800 vehicles and will have good access to the Tacony-Palmyra Bridge, NJ 73 and River Road. The second station will be located in Palmyra just north of Cinnaminson Avenue. This stop will only have a minimal amount of parking (around 25 spaces) and will primarily serve walk-up patrons. The Southern New Jersey Light Rail Transit System is planned to have 15 minute peak period headways and 30 minutes off-peak headways. Service is expected to operate between 6 AM and 11PM. Travel time between Camden and Trenton will be about an hour which is twice as fast as the bus routes which currently serve this route. Service is proposed to begin in 2003.

Bicycle and Pedestrian Facilities

Bicycle and pedestrian travel occurs most often in and around State Development and Redevelopment Plan (SDRP) identified centers including Palmyra, Maple Shade, Moorestown, and Berlin. Bicyclists can and do, however, utilize all the roads (with the exceptions of I-295 and the New Jersey Turnpike) within the corridor. NJ 73 itself has wide, paved shoulders throughout much of its length, which accommodate bicyclists. Kresson and Braddock Mill roads see an unusually large number of weekend recreational bicyclists typically headed for the scenic Kettle Run Road in lower Evesham Township.

Sidewalks, a vital component of any strategy to encourage mass transit use, are not

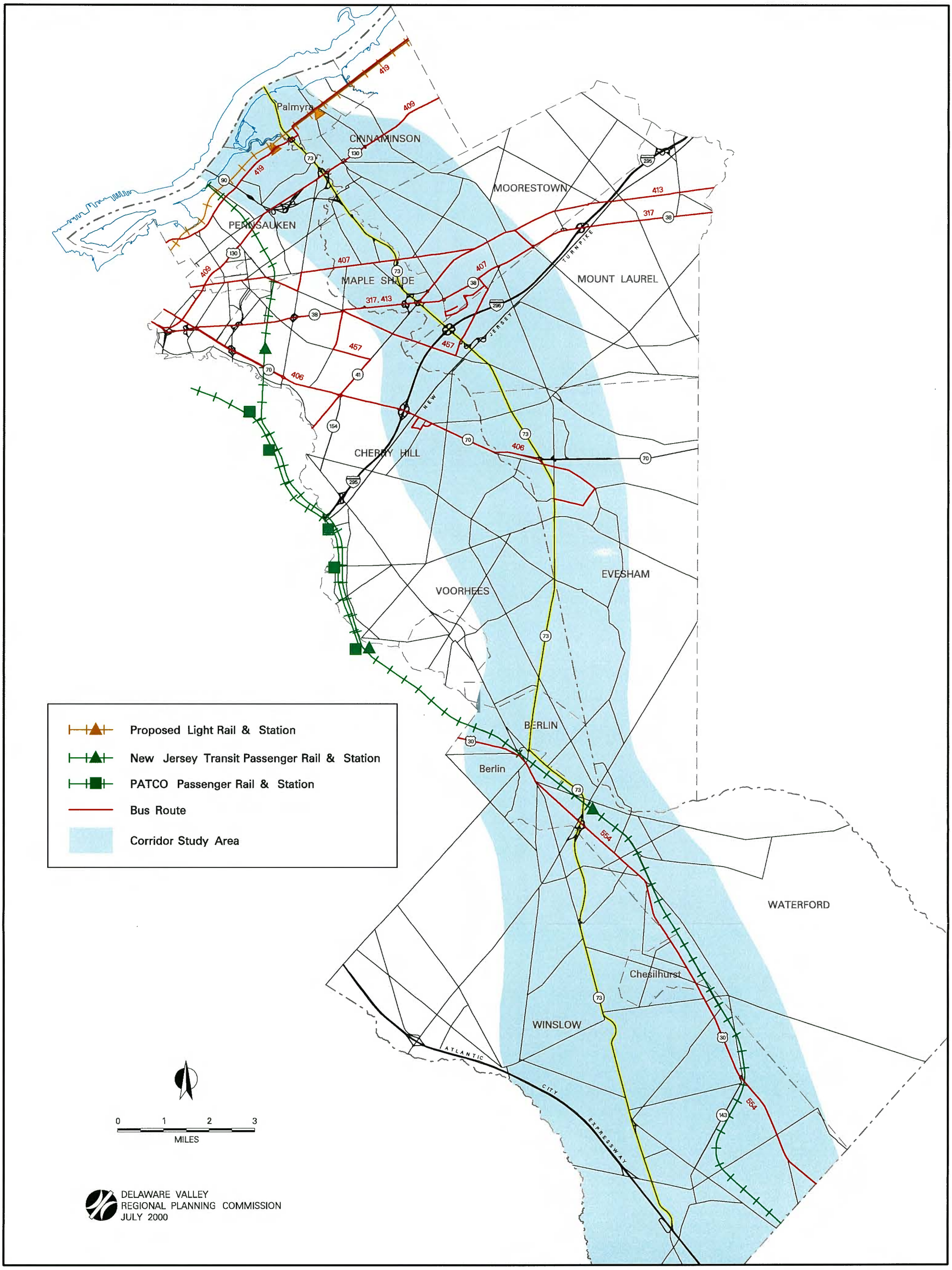
provided along most of NJ 73 and many of its feeder roads. Although wide and heavily traveled, NJ 73 can be crossed by a pedestrian with relative ease at locations other than intersections, thanks to the highway's median strip. Turning movements and lack of crosswalks and warning devices (pedestrian signal heads) make intersections difficult for pedestrians.

In April 1997, the DVRPC board adopted the Southern New Jersey Bicycle and Pedestrian Mobility Plan. This plan proposes a Southern New Jersey Bicycle Network, a comprehensive system of roads recommended for improvements to bicycling. This network includes virtually all the 500, 600, and 700 series county roads. Much of this network can be ridden in relative comfort by a majority of bicyclists: the curb lanes are sufficiently wide for road sharing or the roads have shoulders; and traffic volumes and speeds are relatively low. Notable exceptions within the corridor include CR 544 (Evesham Road) and CR 607 (Church Street). CR 607 is particularly important to bicyclists, as it serves as the only parallel alternative route to NJ 73. A 1994 Cross County Connection TMA survey of workers in the corridor indicated a significant latent demand for bicycle travel (approximately 20 percent of respondents) within the Mt.Laurel/Marlton Subcorridor, which is served by CR 607.

Burlington County has been making strides toward a more bike-friendly road network by adding shoulders as part of nearly all resurfacing projects. Camden County has included bike lanes in some recent resurfacings, including a stretch of CR 537 between Haddonfield Road and the county line. Where installed, bike lanes have provided the additional benefit of traffic calming. Of all the corridor municipalities, only Moorestown Township has a bicycle circulation plan, which it is implementing.

Bicycle and pedestrian planning and design is currently a rapidly evolving field. It is imperative that facilities are planned and designed in accordance with current guidance and standards.

Figure 4
NJ 73 Corridor Study
Transit Service Map



INTELLIGENT TRANSPORTATION SYSTEM (ITS) COMPONENTS

New Jersey DOT has developed an ITS 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 Gloucester, Camden and Burlington. 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 Mt. Laurel monitor traffic conditions, assist in incident management and disseminate information to the public. A closed loop traffic signal system 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. Every traffic signal along NJ 73 from the Tacony Palmyra Bridge to the Berlin Circle 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 2 identifies the ITS components existing or programmed to be deployed along the NJ 73 corridor.

TABLE 2
ITS Components

Route	Milepost	Location	Municipality	Component
NJ 73	6.1	Atlantic City Expressway	Winslow	CCTV
NJ 73	8.7	Blue Anchor Road	Winslow	CCTV
NJ 73	15.4	US 30	Waterford	CCTV
NJ 73	15.4	US 30	Waterford	HAR
NJ 73	17.6	Berlin Circle	Berlin	CCTV
NJ 73	19.2	Cooper Road (CR 675)	Voorhees	CCTV
NJ 73	22.8	Evesham Road/Marlton Parkway (CR 544)	Evesham	CCTV
NJ 73	23.0	North of Evesham Road/ Marlton Parkway	Evesham	VMS
NJ 73	24.1	NJ 70	Evesham	CCTV
NJ 73	25.3	Vicinity of Greentree Road (CR 674)	Evesham	CCTV
NJ 73	26.6	Church Road (CR 616)/Ramblewood Parkway	Mount Laurel	CCTV
NJ 73	27.0	Vicinity of NJ Turnpike Exit 4	Mount Laurel	CCTV
NJ 73	27.3	Fellowship Road (CR 673)	Mount Laurel	CCTV
NJ 73	27.7	Vicinity of I-295	Mount Laurel	CCTV
NJ 73	27.9	Willow Road/Waverly Ave	Maple Shade	CCTV
NJ 73	28.5	NJ 38	Maple Shade	CCTV
NJ 73	29.1	Helene Street	Maple Shade	CCTV
NJ 73	31.0	Northbound side of NJ 73 near High Street	Maple Shade	VMS
NJ 73	31.1	Northbound side of NJ 73 near NJ 90	Cinnaminson	VMS
NJ 73	31.1	High Street	Maple Shade	CCTV
NJ 73	33.0	Hylton Road	Pennsauken	CCTV
NJ 73	33.8	Vicinity of Jefferson Street	Palmyra	CCTV

CORRIDOR 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 26 locations which have been identified within the 14 municipalities which make up this corridor. These locations are shown graphically on figures 5a, 5b and 5c. A relatively detailed write-up of the existing conditions, identified problems and potential improvement scenarios for each location is presented along with schematic figures.

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 discussed with the study stakeholders 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 Burlington County Engineer's Office, 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 north-south direction through the corridor and the numbering has no relation to project priority.

Figure 5A
NJ 73 Corridor Study Section A
Transportation Problem Locations

Figure 5B
NJ 73 Corridor Study Section B
Transportation Problem Locations

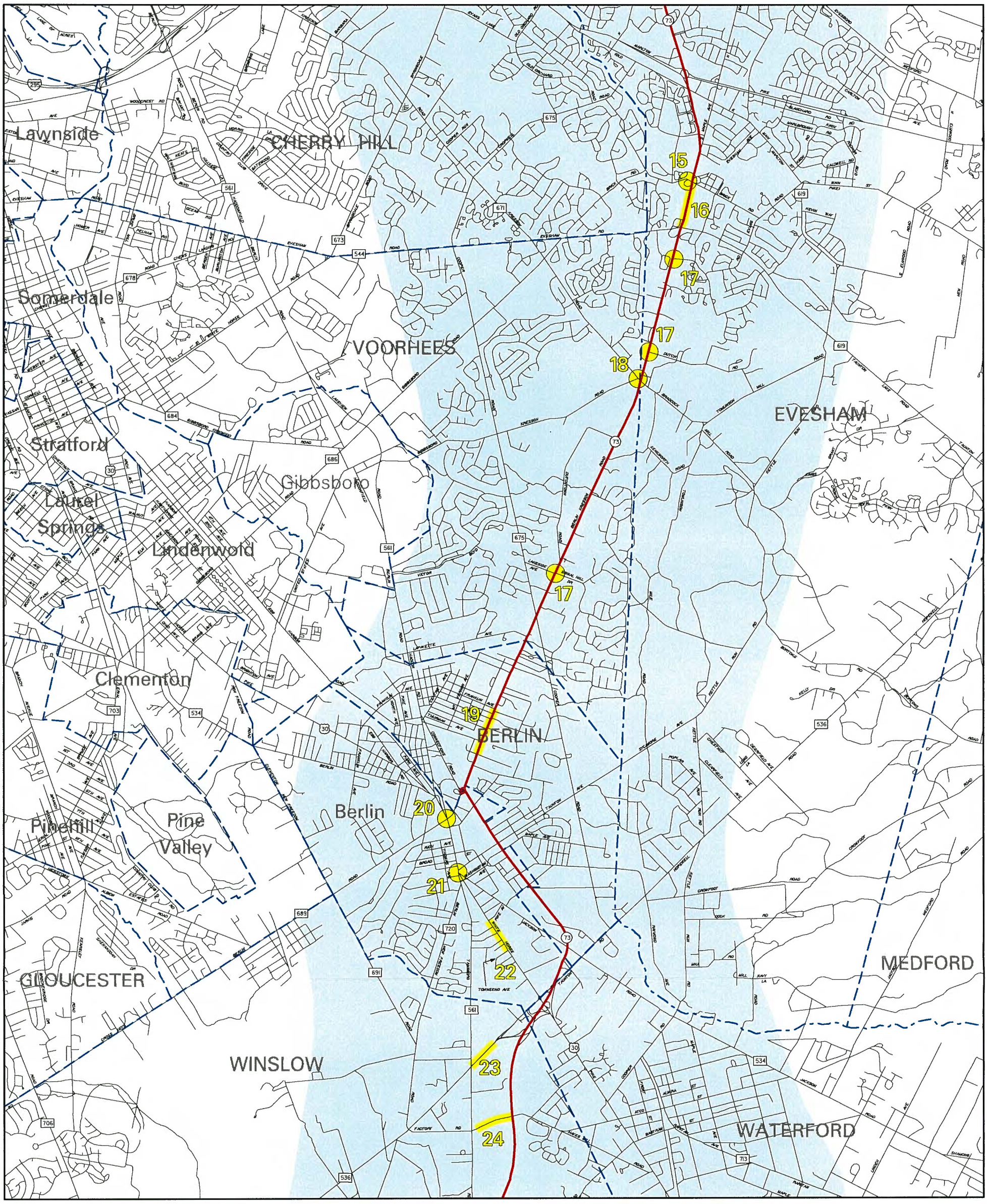
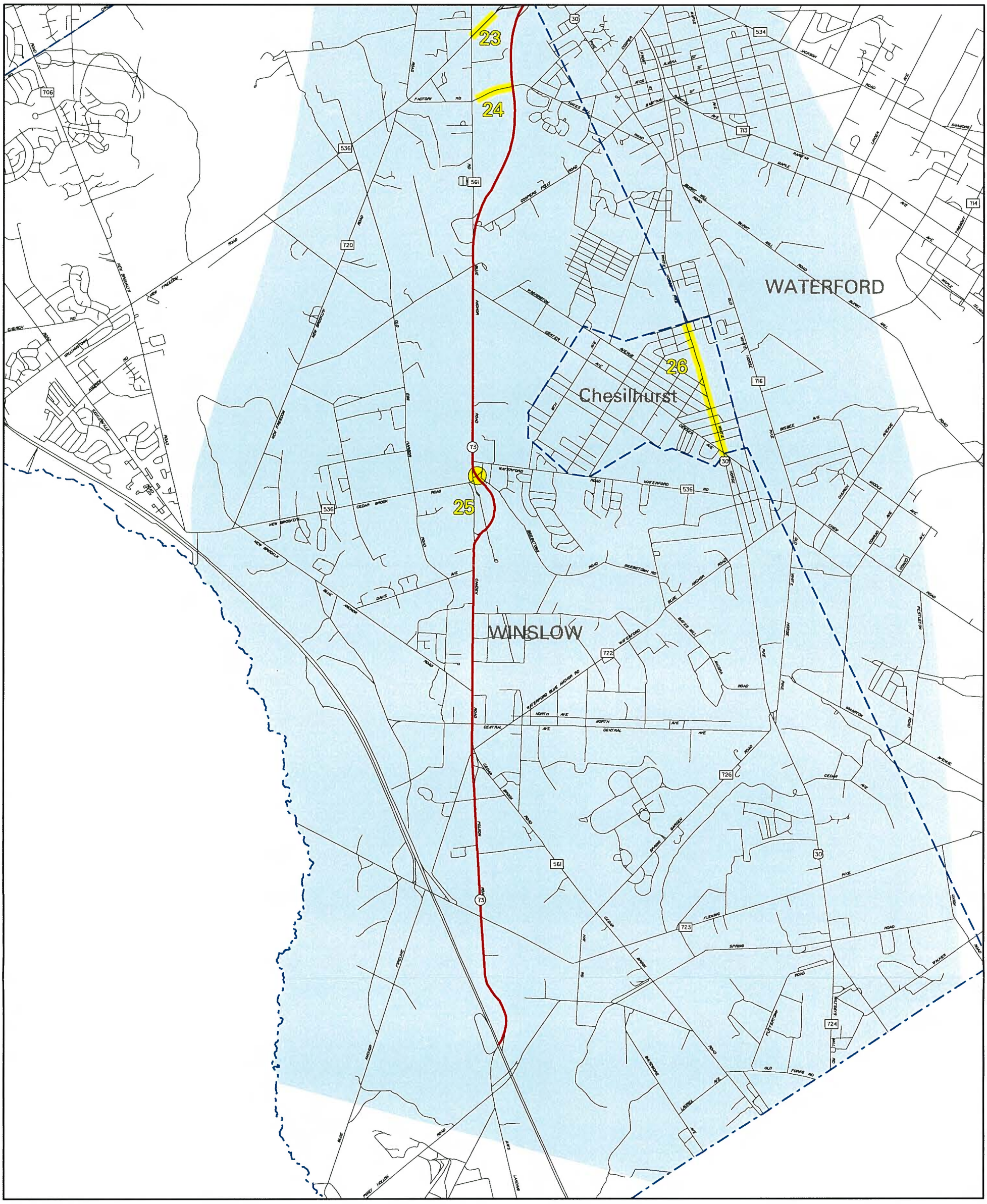


Figure 5C
NJ 73 Corridor Study Section C
Transportation Problem Locations



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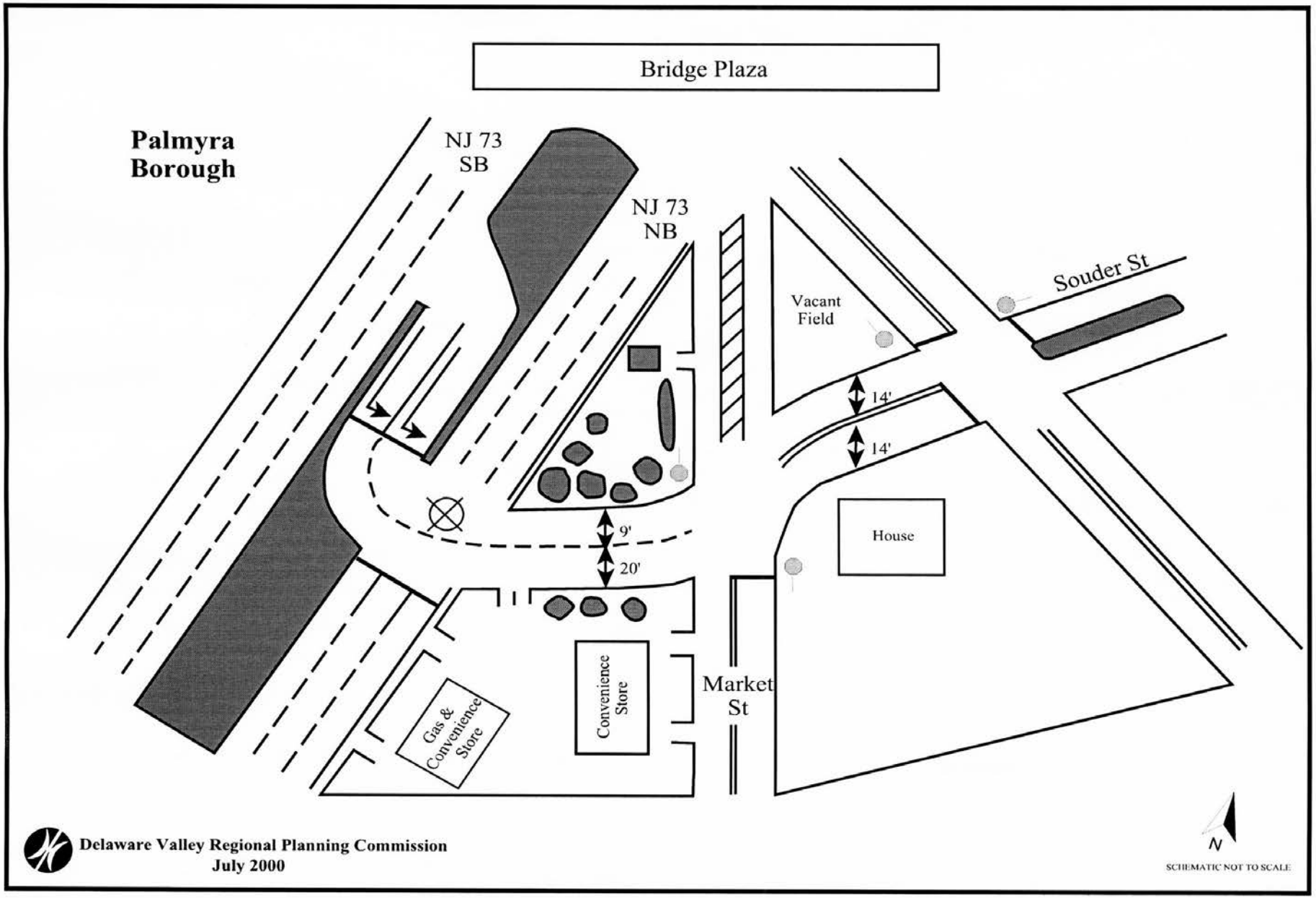
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2000

FIGURE 6: NJ 73 and Souder Street



1. NJ 73 AT SOUDER STREET

milepost 33.99
Palmyra Borough, Burlington County

Existing Conditions:

This three-leg intersection is located approximately 900 feet from the toll plaza of the Tacony Palmyra Bridge. A traffic signal controls the northbound NJ 73 traffic and the traffic from the southbound double left turn lanes from NJ 73 onto Souder Street. Traffic flow on Souder Street is one-way away from the intersection with NJ 73. Southbound through traffic on NJ 73 is not controlled by the signal. Souder Street provides two travel lanes between NJ 73 and Market Street, however these lanes are unevenly striped. The left lane is 9 feet wide and the right lane is 20 feet wide. As Souder Street crosses Market Street it converts to two-way traffic flow and provides a 14 foot travel lane in each direction. There is no lane designation on the one-way section of Souder Street. This causes confusion as vehicles approach Market Street and must merge into one lane to continue on Souder Street. Market Street carries two-way traffic and provides local access to the bridge toll plaza.

Because of the divided nature of NJ 73 there is no access to southbound NJ 73 from this section of the borough. Vehicles wishing to go south on NJ 73 must negotiate the local street system and use the River Road (CR 543) interchange.

Identified Problems:

The primary problems in this area relate to access and circulation. There is no access to southbound NJ 73 from this area of the borough. This restricts mobility as well as increases response time for emergency vehicles. The configuration of the Souder Street approaches at its intersections with Market Street and Temple Blvd creates confusion and poses a potential safety hazard.

Suggested Improvement Scenarios:

- Discussions to improve access to NJ 73 have included converting Souder Street to two-way operation between NJ 73 and Market Street and allowing left turns from Souder Street onto southbound NJ 73. The realignment/reconfiguration of Souder Street along with new signing and upgraded pavement markings should also be included.

FIGURE 7: Souder St. Eastbound at Market St.

FIGURE 8: Souder St. Westbound at Market St.

2. NJ 73 NORTHBOUND AT BROAD STREET

milepost 33.45
Palmyra Borough, Burlington County

Existing Conditions:

NJ 73 carries two travel lanes in each direction in this vicinity and is divided by a concrete median barrier. Broad Street carries one travel lane in each direction in the vicinity of NJ 73. The intersection with Broad Street is a three-leg unsignalized intersection with right-in/right-out access only.

Immediately adjacent to the intersection on the east side of Broad Street, is the bridge which carries the Conrail freight line over NJ 73. The bridge abutment is located directly adjacent to northbound NJ 73 and allows no room for a deceleration lane for right turns onto Broad Street. On the northwest corner is a grass field which sits adjacent to the parking lot for a liquor store. The driveway from NJ 73 to the liquor store is located approximately 175 feet west of Broad Street. The speed limit on NJ 73 is posted at 45 MPH. The posted speed limit on Broad Street is 35 MPH.

A cloverleaf interchange between NJ 73 and River Road (CR 534), located approximately 1,000 feet south of Broad Street does not provide a northbound NJ 73 off ramp for access into Palmyra. However, approximately 300 feet north of the interchange a right-in/right-out intersection exists with Spring Garden Street. The Broad Street intersection represents a key access point into Palmyra from northbound NJ 73. Broad Street is the principal north-south road through Palmyra and provides direct access to the downtown business district. North of the Broad Street intersection, Fifth Street, Jefferson Street and Madison Street provide right-in/right-out access between northbound NJ 73 and Palmyra. There is a median break and traffic signal at the Souder Street intersection with NJ 73. Traffic from the Tacony-Palmyra Bridge can gain access to the borough through this intersection but left turns are not permitted from Souder Street on to southbound NJ 73.

Identified Problems:

Although there are several locations to turn from northbound NJ 73 into Palmyra, the most direct access to the center of town has potentially the worst problem. The proximity of the Conrail bridge to Broad Street eliminates the possibility of a deceleration lane for northbound right turns. High speeds on northbound NJ 73 increases the possibility of a rear end collision at this intersection. The bridge abutment also restricts sight distance for vehicles attempting to turn right from Broad Street on to northbound NJ 73. There is also

a drainage problem on NJ 73 under the rail overpass.

Suggested Improvement Scenarios:

There are several options which should be evaluated to determine their effectiveness to improve the access from northbound NJ 73 into Palmyra. These fall into short term and long term scenarios.

Short Term

- Encourage access to Spring Garden Street through signing and prohibiting right turns onto Broad Street from northbound NJ 73. Spring Garden Street would have to be upgraded and the county should consider taking over the two block section between NJ 73 and Hylton Road.
- Increase the radius for right turns from Broad Street onto NJ 73 by cutting back the corner to provide better sight distance and an acceleration lane.

Long Term

- Realign Broad Street to the north through the adjacent field; this would shift the intersection away from the rail line and potentially allow for a deceleration lane.
- Replace the Conrail Bridge over NJ 73 and move the abutment back away from the edge of the road. This is an expensive proposition but there are other issues that could impact this scenario. If the old drive-in movie were ever redeveloped into an industrial park a spur from the rail line could be a possibility and a new bridge may be required. The other issue in the equation is the potential light rail transit service being proposed for this line.
- Construct a northbound off ramp from NJ 73 onto River Road. The key issues that would need to be addressed with this option is the proximity of the NJ 73 bridge over the Pennsauken Creek, the viability of the land on that quadrant of the interchange to support a road and the high cost in relation to the benefits.

FIGURE 9: NJ 73 Looking South at Broad St.

FIGURE 10: Broad St. Looking West Toward NJ 73

3. RIVER ROAD (CR 543): NJ 73 TO SHERMAN AVENUE

Pennsauken Township, Camden County

Existing Conditions:

River Road carries one lane in each direction through a primarily industrial area. However there is a residential area in the vicinity of the Betsy Ross Bridge. A rail line which serves the Delair Bridge crosses River Road between Sherman Avenue and Derousse Avenue. This overpass is posted as a low clearance at 13 feet 8 inches. Low clearance warning signs are posted on River Road south of Sherman Avenue and north of Derousse Avenue. There is a significant dip in River Road under the rail bridge and this can sight distance problems.

NJ Transit plans to build a park and ride site for the Southern New Jersey Light Rail Transit System on River Road just south of the NJ 73 interchange. This park and ride is proposed to accommodate 800 vehicles. This is the same vicinity in which the development of a new truck stop is being discussed. Because of space limitations it is not likely that both of these projects can be fully built out to their intended size. Even if only the 800 vehicle park and ride is built, the traffic generated from this site is expected to have an impact on the operations of the surrounding road network.

Identified Problems:

Sherman Avenue is a designated truck route between River Road and Westfield Avenue (CR 610). However, the turning radius at the intersection of River Road and Sherman Avenue is very tight. Trucks frequently mount the curb and cross the centerline as they negotiate turns on to Sherman Avenue from River Road. There are no signs on the Sherman Avenue approach to Westfield Avenue to direct the trucks back to US 130. Because of the proximity to the Delaware River and the dip in the road, River Road occasionally experiences a drainage problem under the rail overpass. Bicyclists and pedestrians as well as vehicles have difficulty passing through this area after heavy rains.

Suggested Improvement Scenarios:

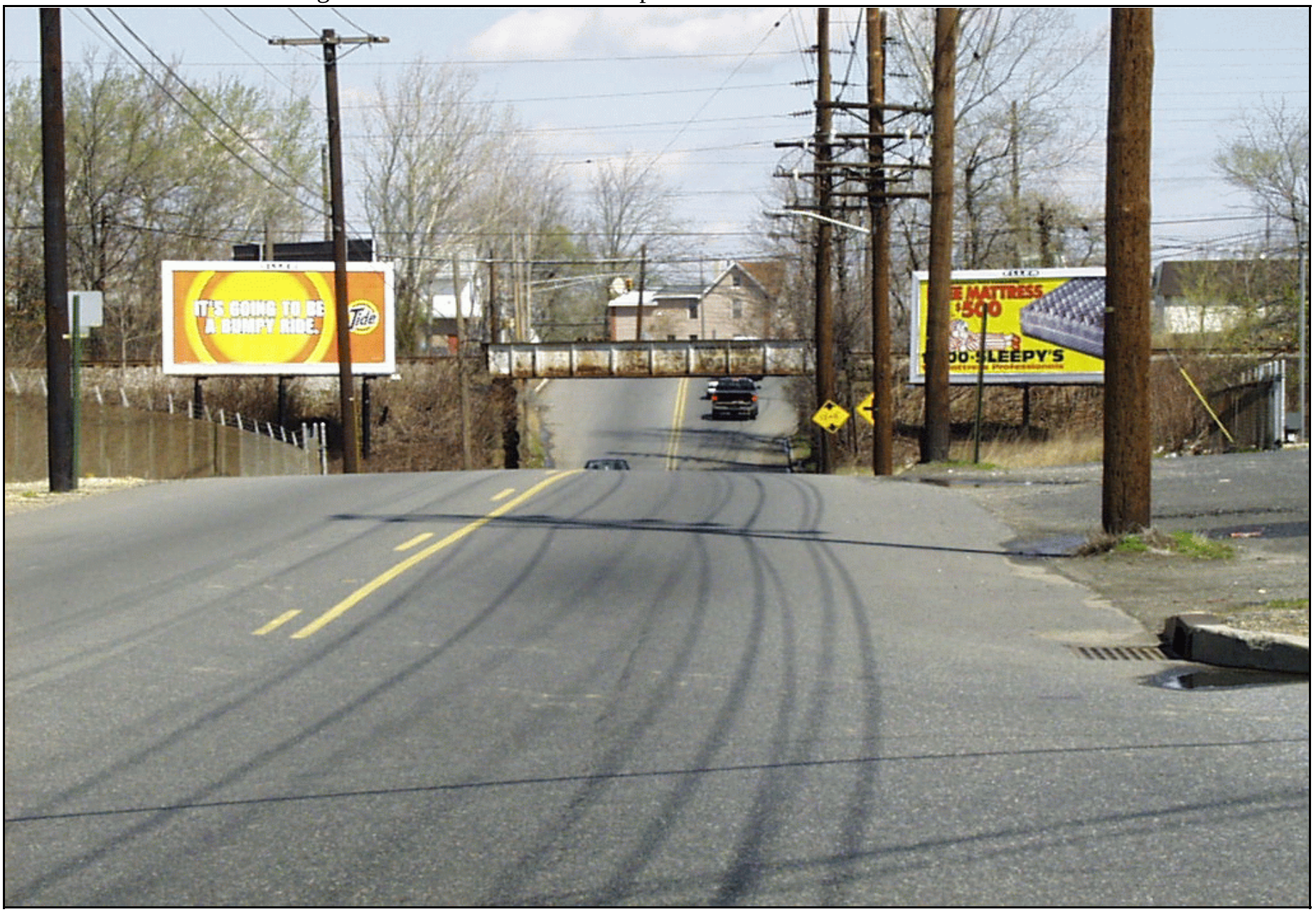
- Intersection improvements at Sherman Avenue and River Road include widening the intersection and increasing the turning radius to accommodate trucks. This may require a slight realignment/shift of the intersection to the south.
- Improve the pavement condition along Sherman Avenue and on River Road under

the rail overpass.

- Erect a trailblazer sign to US 130 on the Sherman Avenue approach to Westfield Avenue.
- Erect a low clearance sign on the Sherman Avenue Approach to River Road.
- Work with NJ Transit to provide adequate access/egress into the proposed park and ride site by providing accel/decel lanes and a northbound left turn lane on River Road. Monitor the impacts of the planned 800 car park and ride facility on the operating conditions of River Road and the interchange with NJ 73.

FIGURE 11: River Rd. Looking East at Sherman Ave.

FIGURE 12: River Rd. Looking East at NJ Transit Rail Overpass



4. US 130: CINNAMINSON AVENUE TO RIVERTON ROAD

milepost 36.0 to 37.14
Cinnaminson Township, Camden County

Existing Conditions:

The Cinnaminson Avenue Complex is actually the convergence of three roads east of US 130 and one road from the western side of US 130 into one location. On the eastern side, Lenola Road (CR 608) merges into Church Road (CR 607) which joins with Branch Pike (CR 606) just before US 130. Cinnaminson Avenue (CR 607) intersects US 130 on the western side. These facilities merge together to form two interconnected signalized intersections along US 130 which are approximately 375 feet apart. The operation of this location is actually similar to that of a traffic circle. US 130 carries three travel lanes in each direction through this location and is separated by a concrete median barrier. All turns from US 130 are accommodated through jughandles where they must mix with the traffic from the side streets. Compounding the complexity of this location is the intense retail development in the immediate vicinity including those located within the jughandle.

1995 traffic counts conducted by DVRPC indicated the following AADT's: 1) approximately 59,900 vehicles on US 130 between Cinnaminson Avenue and NJ 73, 2) approximately 8,300 on Cinnaminson Avenue, 3) approximately 9,300 on Lenola Road, 4) approximately 17,500 on Church Road and 5) approximately 4,000 on Branch Pike.

Identified Problems:

Significant congestion on US 130 as well as on the cross street approaches to US 130 is experienced particularly in the peak periods but can occur at intermittent times during the day. In the vicinity of Cinnaminson Avenue, the number of cross streets merging together at this location and the amount of traffic pushed through these intersections eliminate the possibility of realizing noticeable benefits through operational improvements such as signal retiming or lane designations. The proximity of the retail development around Cinnaminson Avenue generates significant traffic through the intersection and adds to the conflicts created by turning vehicles. The disjointed nature of the cross streets at both Cinnaminson Avenue and Riverton Road causes through traffic to circumvent the intersection on the jughandles. The proximity of the two signals controlling each location causes vehicles to get trapped on US 130 between the signals and adds to the back-ups when left turns from the side streets are released into this area. Driveway access onto the

jughandles causes conflicts for vehicles proceeding through the intersections.

Suggested Improvement Scenarios:

- As a result of work completed in the US 130 Corridor Study, NJ DOT has been working with the county and Cinnaminson Township to develop an improvement plan which will address the problems identified above. NJ DOT has hired a consultant to evaluate the operational conditions along this section of US 130 and to assist in the development of improvement concepts.

5. PENNSAUKEN COMMERCIAL/INDUSTRIAL AREA ACCESS

Pennsauken Township, Camden County

Existing Conditions:

The southeast quadrant of the US 130/NJ 73 interchange area contains several commercial and industrial uses that are important to the economic well being of Pennsauken Township as well as the northern portion of this corridor. The Pennsauken Expo Center, the Pennsauken Mart and the eastern portion of the Pennsauken Industrial Park are all located in this vicinity.

Identified Problems:

Access to this commercial/industrial area from NJ 73 northbound is very circuitous and poorly signed. Vehicles traveling northbound on NJ 73 must enter the interchange with US 130 and take US 130 southbound, loop through the interchange again to take NJ 73 southbound and access this area from NJ 73 southbound. A small sign for the Pennsauken Expo Center, partially obstructed by vegetation is located at the gore area of the US 130 southbound off-ramp to NJ 73 south. No other signs are evident along NJ 73 northbound.

Suggested Improvement Scenarios:

- Discussion has centered around the construction of a new off-ramp from NJ 90 on to Haddonfield Road (CR 644). The concept would be that northbound NJ 73 traffic would take NJ 90 westbound directly to the new ramp. The ramp, as discussed, would potentially depart from NJ 90 westbound just after the bridge over the South Branch of the Pennsauken Creek. The subject ramp would join Haddonfield Road in the vicinity of the existing signalized intersection of Haddonfield Road and Pennsauken Highway/Expo Center Driveway. There are several major issues associated with the feasibility of this ramp: 1) the geometrics (curve and grade differential), 2) the point of intersection with Haddonfield Road and 3) right-of-way (it may require some taking of the Expo Center parking lot). A feasibility study of this proposed ramp should be conducted to determine if it is physically possible and what the potential costs might be. The ramp alignment to be studied should not be designed as a private ramp from a state highway to a commercial site (Expo Center) but should primarily provide access to Haddonfield Road.

6. FORK LANDING ROAD

Cinnaminson Borough, Camden County

Existing Conditions:

Fork Landing Road, a municipal street, connects Lenola Road to NJ 73. In the vicinity of the Pennsauken Creek, the road is 23 feet wide on the north side of the creek and only 18 feet wide on the south side. There is no centerline stripping and there are no shoulders. The bridge, owned and maintained by the county, carries one lane over the creek and is 13 feet wide and 62 feet long. There is a weight restriction of 15 tons on the bridge. Even though this road experiences significant geometric constraints, it provides an important connection between southern Cinnaminson and NJ 73.

On the north side of the bridge, the road makes a sharp turn to the west and quickly makes a sharp turn back towards the north. Speed advisory signs are posted on the turns for 15 MPH. In this section there is a slight downgrade towards the creek. There is a house located adjacent to the road on the first curve north of the bridge. A seasonal produce stand is located on the second curve.

On the south side of the bridge, wetlands abut both sides of the road. The northbound NJ 73 near side jughandle intersects Fork Landing Road on a curve approximately 600 feet from the bridge. There are a few homes located relatively close to Fork Landing Road in the vicinity of this curve.

Identified Problems:

The substandard geometrics of the road create safety problems. The weight restriction and narrowness of the bridge restricts mobility through this area. During rain storms, flooding frequently occurs on the road to the south of the bridge. A seasonal produce stand located on the second curve north of the bridge creates a safety problem due to the following factors: 1) the sharp curve and adjacent vegetation severely restricts sight distance, 2) customers park on the edge of the road in both directions and 3) there are many pedestrians crossing the road at this location to get from their vehicles to the produce stand.

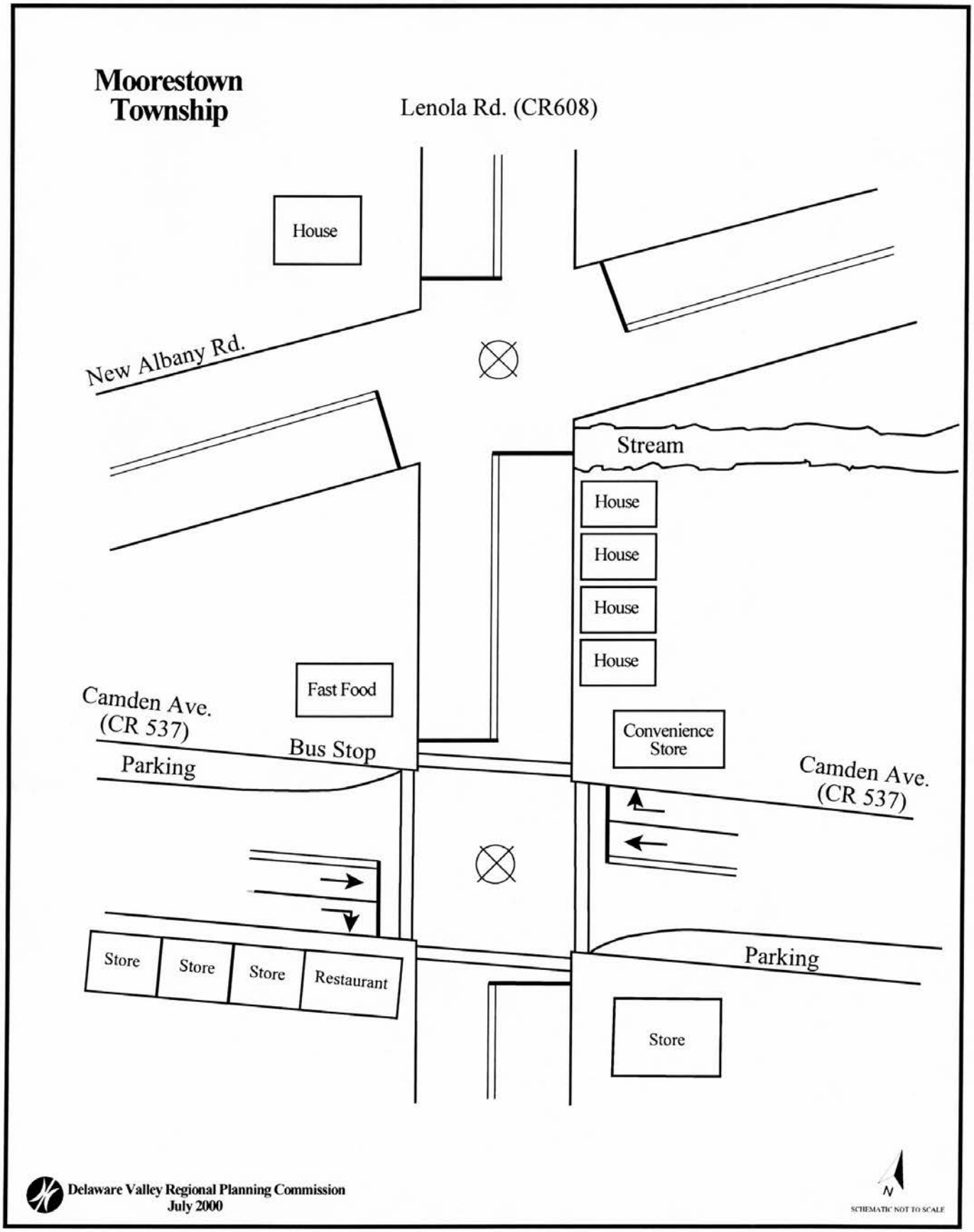
Potential Improvement Scenarios:

- The existing road and bridge structure can not safely and efficiently meet the travel needs through this area. To adequately meet these needs, Fork Landing Road

would need to be upgraded to standards, the curves would need to be eliminated and a new two-lane bridge should be constructed. Implementing those improvements at this location, although desirable, would be very problematic because of the associated environmental and social constraints. The adjacent wetlands, residences and business all present such significant hurdles that other options for serving this travel demand should be identified and evaluated. A study should be conducted which takes a macroscopic look at this problem and evaluates potential solutions.

- One option is to evaluate the potential to make another connection between Lenola Road and NJ 73. Although similar types of environmental and social constraints would be involved, if their severity was greatly reduced it could make the option more attractive. A potential location that deserves at least some consideration would be to build a new road and bridge that would connect Lenola Road in the vicinity of Shenandoah Road to the NJ 73 northbound jughandle at the signalized intersection with High Street in Maple Shade. This connection would relieve the pressure on Fork Landing Road, provide a safe connection, and enhance the mobility of this area by providing access not only to NJ 73 but also NJ 90 and the Betsy Ross Bridge. However, legitimate concerns still exist: 1) construction of a new road on new alignment requires right of way acquisition, 2) this option still requires a stream crossing and encroachment on wetlands, 3) a business adjacent to the jughandle could potentially be impacted, 4) this new alignment would require coordination with Moorestown, Maple Shade and NJ DOT and 5) concerns of preventing increased traffic through the residential neighborhood on Shenandoah and/or Acadia Roads to reach Church Road.

FIGURE 13: Lenola Road and New Albany Road and Camden Avenue



7. LENOLA ROAD (CR 607) AT CAMDEN AVENUE (CR 537), AND AT NEW ALBANY ROAD

Moorestown Township, Burlington County

Existing Conditions:

These two signalized intersections are located on Lenola Road approximately 400 feet apart. Lenola Road provides one lane in each direction through these intersections. The cartway is not wide enough to permit through traffic to pass around vehicles queued up to turn left from Lenola Road. The land uses adjacent to the Lenola Road/Camden Avenue intersection all have parking lots with access onto each leg of the intersection. Both the eastbound and westbound approaches on Camden Avenue provide right turn lanes in addition to the shared through/left turn lane. Although right turn lanes exist, tight turning radii forces trucks to frequently cross the center line into opposing traffic when turning onto Lenola Rd. On-street parking on Camden Avenue is eliminated in the immediate vicinity of the intersection to provide for the right turn lanes. Lenola Road is not wide enough to accommodate on-street parking.

Albany Road intersects Lenola Road at an angle. The Moorestown Industrial Park can be accessed by going north on Lenola Road or east on New Albany Road. Because of the proximity of the industrial park, both intersections experience noticeable truck traffic. New Albany Road carries one lane in each direction and because of the proximity of the adjacent land uses, no additional turn lanes are provided at the intersection.

Identified Problems:

Lenola Road experiences congested conditions especially during the peak periods. Queues on southbound Lenola Road extend from Camden Ave to New Albany Road. This makes it difficult for vehicles to turn left onto Lenola Road from New Albany Road. Much of the congestion at Lenola Road and New Albany Road is attributable to queues from The Lenola Road and Camden Avenue intersection. Because of the obtuse angle of the Lenola Road/New Albany Road intersection, trucks have difficulty turning right from westbound New Albany Road to northbound Lenola Road.

Suggested Improvement Scenarios:

Intersection improvements at the Lenola Road/Camden Avenue intersection could provide benefits for both intersections. A detailed intersection study should be conducted to

determine the feasibility of minor widening on Lenola Road to accommodate turning lanes, optimizing the signal timing and removing the No Turn On Red signs. At the Lenola Road/New Albany Road intersection, a church located on the northeast corner prevents cutting the curb back to increase the turning radius to accommodate truck movements. If a stop bar was installed on southbound Lenola Road and moved back away from the intersection, the conflicts between right turning trucks and stopped vehicles could be reduced.

FIGURE 14: Lenola Rd. Looking North at Camden Ave.

8. NJ 73: MAIN STREET (CR 537) TO FOX MEADOW

milepost: 29.68 to 29.12
Maple Shade Township, Burlington County

Existing Conditions:

NJ 73 carries two travel lanes in each direction through this area. In the northern end of this segment, the northbound and southbound traffic are separated by a jersey barrier. In the southern end, a grass median serves as the divider between northbound and southbound traffic flow. The posted speed limit on NJ 73 is 50 MPH. Access to NJ 73 is provided in various ways. At Main Street, a grade separated interchange utilizes a set of ramps to provide access. An at-grade signalized intersection with near side jughandles to accommodate U and left turns, provides access to the Fox Meadow Apartments and Fellowship Road. There are also several right in/right out streets/driveways located in this section. Approximately 1,100 feet north of Main Street, NJ 73 is crossed by a rail bridge which carries freight traffic.

Identified Problems:

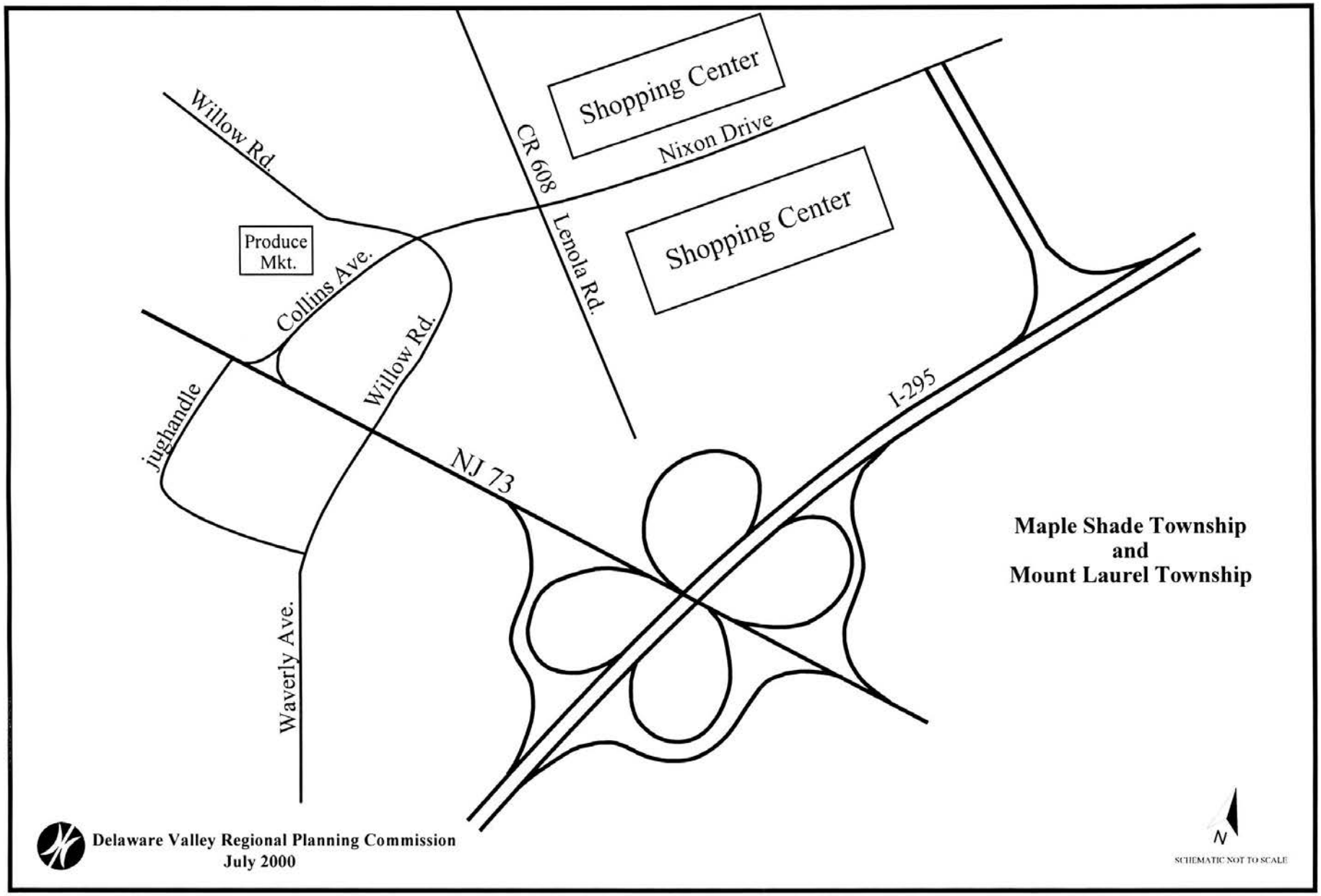
This section of NJ 73 experiences significant peak period congestion. Access problems associated with ramps/jughandles at Main Street and Fox Meadow contribute to the operational problems. Drainage problems exist on NJ 73 under the Main Street overpass and under the rail overpass just north of Main Street.

Suggested Improvement Scenarios:

- An improvement project programmed on DVRPC's Transportation Improvement Program (TIP) (#94068) will address operational improvements along NJ 73 from Main Street to Fox Meadow. A realignment of the Main Street ramps and the Fox Meadow/Fellowship Road jughandles have been proposed. The addition of another travel lane through this section and a new connecting road from the apartment complex to the Main Street ramp is expected to improve operating conditions in this section. This TIP project however, does not address the drainage problem at either the Main Street overpass or rail overpass. Improvements to the drainage problems should be included in the project to improve the operational conditions. The proximity of the rail bridge to this programmed improvement makes it appropriate to combine these two problems. It may even be appropriate to carry the additional travel lane north through the rail overpass.

- NJ DOT should identify alternate routes which could serve as detours when incidents or heavy congestion make this section of NJ 73 unpassable. These detour routes could also help mitigate the effects of the upcoming construction project. Detour plans should be developed with consideration given to the following facilities to be used as alternate routes: NJ 38, Coles Ave (CR 627), Main Street (CR 537), NJ 41 and Lenola Road (CR 608).

FIGURE 15: Eastgate Area Map



9. NJ 73: I-295 TO COLLINS AVENUE

milepost: 27.68 to 27.97

Maple Shade Township and Mount Laurel Township, Burlington County

Existing Conditions:

NJ 73 is divided by a concrete median barrier through this section and the number of travel lanes varies. Two lanes by direction are available just north of the bridge over I-295. North of I-295, a third lane is added northbound to accommodate right turns onto Collins Avenue. North of Collins Avenue, this third lane serves as a general purpose travel lane. Entering this section southbound, three lanes are available with one serving right turn movements onto the Waverly Avenue jughandle. South of the Waverly Avenue jughandle, the third lane serves right turn movements onto the I-295 southbound on-ramp. At this point, the third lane is dropped and two lanes are available until the southbound I-295 off-ramp merges into NJ 73. On the bridge over I-295, a third lane in each direction serves as a short accel/decel lane for the I-295 ramps. As a result of all these lane changes and lane drops, a lot of weaving movements occur within this section of NJ 73.

A traffic signal controls operations at the intersection of NJ 73 and Waverly Avenue/Willow Road. On the northbound side of NJ 73, Willow Road is one-way only towards NJ 73 and provides three approach lanes: two left turn only lanes and a shared through/right turn lane. On the southbound side of NJ 73, Waverly Avenue provides two approach lanes (right turn only and left turn only) and one departure lane. The Collins Avenue intersection serves right-in and right-out movements only with one lane in each direction. Collins Avenue provides access to the Moorestown Mall and the East Gate Square Shopping Center for northbound NJ 73 traffic.

The I-295 southbound off-ramp to northbound NJ 73 was removed and relocated onto Nixon Drive in the East Gate Square Shopping Center. Traffic destined to northbound NJ 73 must now use Nixon Drive/Collins Avenue.

Identified Problems:

This section of NJ 73 experiences extreme congestion during both peak periods and is frequently congested throughout the day. The heavy traffic volumes are related to the through traffic, the access to I-295, access to the NJ Turnpike and the concentration of commercial development including the Moorestown Mall and the East Gate Square

Shopping Center. Many of the operational problems are related to the lane configurations, signal timing and weaving/merging movements.

A weaving/merging problem exists on NJ 73 northbound in the vicinity of the I-295 northbound off-ramp and the I-295 southbound on-ramp. This maneuver is further complicated by the northbound NJ 73 traffic wishing to stay in the right turn lane in order to turn right on to Collins Avenue to access the shopping areas.

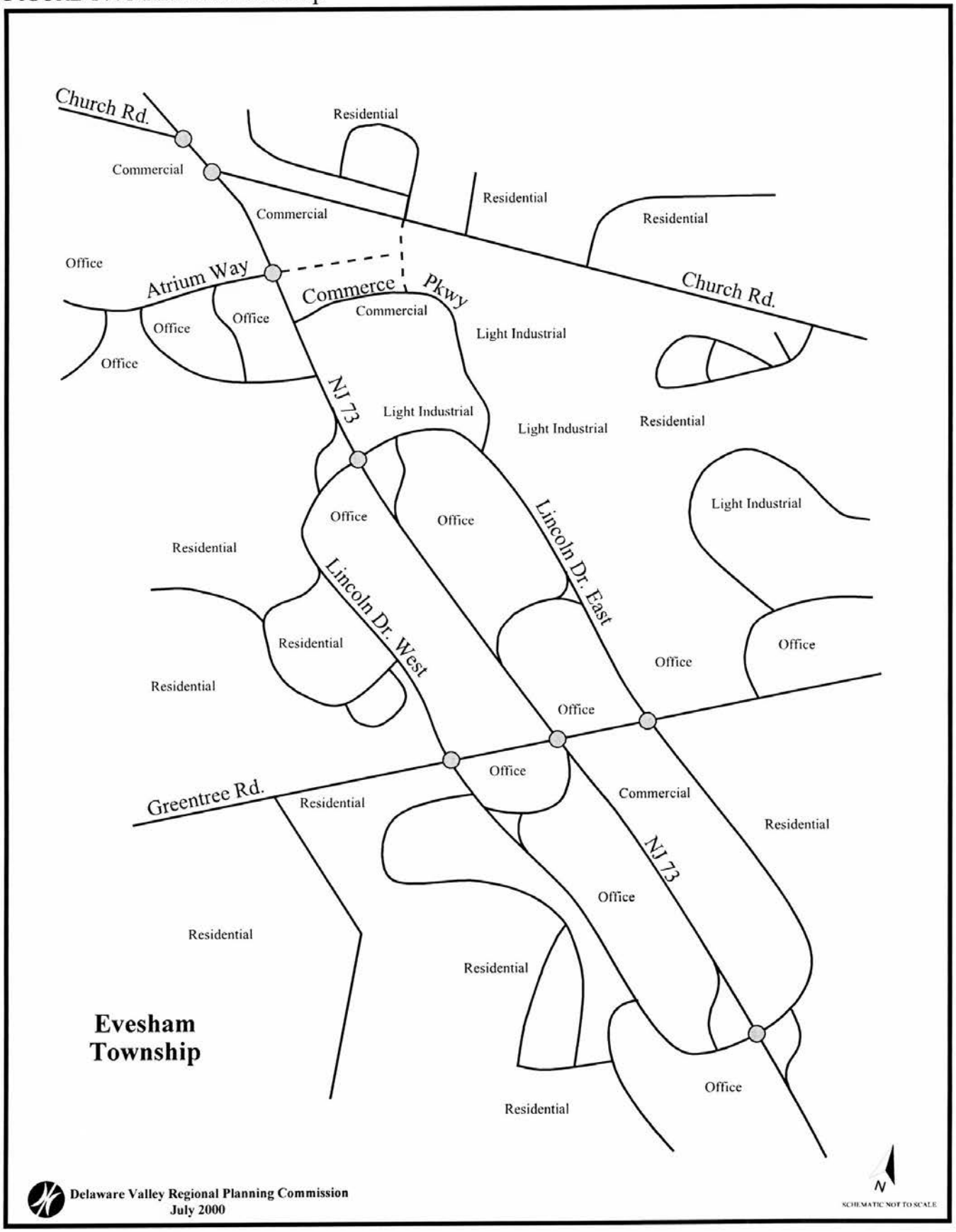
The obtuse angle of the approach legs and the numerous conflicting turning movements at the intersection of Willow Road and Collins Avenue creates congestion and safety problems. A traffic signal is planned for this intersection.

Suggested Improvement Scenarios:

- Install a traffic signal at the intersection of Willow Road and Collins Avenue to control the movements at this intersection.
- Optimize signal timing and interconnect signals at the NJ 73/ Willow Road and Collins Avenue/Willow Road intersections
- Install lane designation signing and striping to better inform motorists of approaching lane drops and merge areas.
- Because of the proximity of the southbound I-295 on-ramp from Nixon Drive, it is not recommended to reinstall the southbound I-295 off-ramp to northbound NJ 73. The spacing of these two ramps would create hazardous weaving movements.

FIGURE 16: Willow Rd. Looking Toward NJ 73 at Collins Ave.

FIGURE 17: Marlton Area Map



10. NJ 73: I-295 TO ATRIUM WAY

milepost: 27.66 to 26.15

Mount Laurel Township, Burlington County

Existing Conditions:

NJ 73 carries two travel lanes in each direction and is separated by a grass median through this section. However, in selected areas auxiliary lanes have been added to accommodate left or right turns. In the southbound direction, NJ 73 provides four lanes on the approach to Fellowship Road (CR 673). The two left lanes carry southbound through traffic. The next lane provides access to the NJ Turnpike Interchange on-ramp, south of Fellowship Road. The far right lane serves traffic turning right onto Fellowship Road or accessing the farside jughandle for left turns onto Fellowship Road. This lane configuration is often confusing to motorists. Although there is some signing for the lane designation it is not prominent or far enough in advance for vehicles to position themselves when traffic flow is heavy. Although southbound left turns are accommodated by a farside jughandle at this intersection, the northbound left turns use a center left turn lane.

Other signalized intersections in this segment exist at Howard Blvd., at Church Road (CR 616)/Ramblewood Parkway and at Atrium Way. Left turns from NJ 73 are accommodated at these intersections via center left turn lanes. The Church Road/Ramblewood Parkway intersection is a five-leg intersection with the two Church Road legs offset by approximately 400 feet. Eastbound traffic on Church Road must turn right onto NJ 73 southbound, cross the two through lanes and enter the left turn lane within the 400 foot offset and make a left turn to proceed eastbound on Church Road. This movement is replayed in the westbound direction for westbound Church Road through traffic. Atrium Way is a three-leg intersection which provides access to an office complex on the southbound side of NJ 73. The land use adjacent to NJ 73 along this segment is primarily commercial and office.

Identified Problems:

This section of NJ 73 experiences severe congestion during both peak periods and congestion can occur throughout the day. Significant congestion also occurs on the cross streets at the signalized intersections with NJ 73. The most common conditions contributing to the congestion in this area include: the highway's limited ability to accommodate the high demand, weaving movements to access turn lanes/ramps to cross streets or interchanges and signalized intersections stretched to provide access for both NJ 73 and high volume cross streets (Church Road CR 616). Because of the heavy demand for northbound and southbound left turns from NJ 73 onto Church Road, vehicles frequently spill back into the through lane effectively reducing the through capacity to one

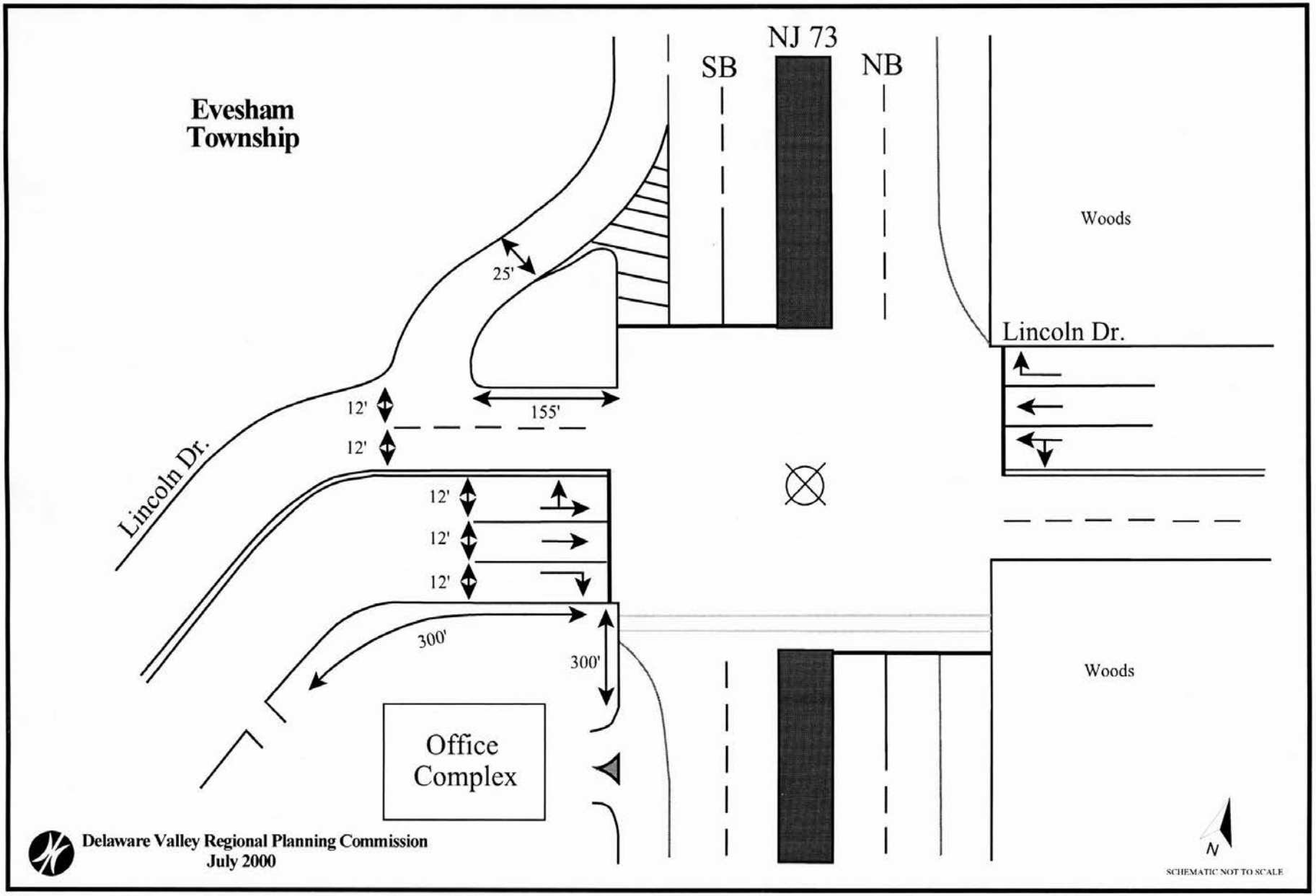
lane.

Commuters have been observed alighting the NJ Transit bus routes 406 and 457 to reach the office park along Atrium Way. There are no sidewalks are provided in this area and pedestrians must walk along the shoulders or roadway edge.

Suggested Improvement Scenarios:

- Detailed intersection analysis should be conducted at the Fellowship Road intersection and at the Church Road (CR 616)/Ramblewood Parkway intersection with consideration given to adding or realigning auxiliary lanes to serve turning movements.
- Additional lane designation signing should be constructed at the signalized intersections and also far enough in advance of the intersections to allow drivers adequate time to line up in the appropriate lanes.
- To address the left turn problems at the Church Road (CR 616)/Ramblewood Parkway intersection, the ability to make these turns at another location should be investigated. An extension of Atrium Drive intersecting a Church Road/Commerce Parkway connector could potentially remove some of the turning movements from the NJ 73/Church Road/Ramblewood Parkway intersection. This would require right-of-way acquisition and impact an existing business along NJ 73 (equipment rental business). This extension and connector could also provide benefits to other locations along the corridor (see location 11: NJ 73 at Lincoln Drive and Figure 17)
- NJ DOT should utilize the ITS equipment (currently deployed or planned)in this area to monitor real time traffic conditions and disseminate information via variable message signs, highway advisory radio, SmarTraveler website and through the media. Use of the ITS equipment such as vehicle detection systems, closed circuit TV cameras and closed loop signal systems will help improve the operations of this section of the corridor.
- NJ DOT should consider the development of an accident investigation site and the introduction of peak period emergency service patrols to quickly remove damaged or disabled vehicles from the roadway thereby freeing up much needed capacity.
- NJ DOT should identify alternate routes which could serve as detours when incidents or heavy congestion make this section of NJ 73 unpassable. Detour plans should be developed with consideration given to the following facilities to be used as alternate routes: I-295, NJ 70, NJ 41, Fellowship Road (CR 673) and Church Road (CR 616).
- Sidewalks should be added to provide access from NJ Transit bus routes 406 and 457 to the office park along Atrium Way.

FIGURE 18: NJ 73 at Lincoln Drive



11. NJ 73 AT LINCOLN DRIVE

milepost: 25.75
Evesham Township, Burlington County

Existing Conditions:

NJ 73 carries two travel lanes in each direction in this vicinity and is divided by a grass median. Because the highway is separated by a grass median, the signalized intersections provide the only opportunities to access things on the other side. The signalized intersection at Lincoln Drive accommodates U and left turns through a pair of near side jughandles. The signalized intersection approximately 2,100 feet to the north, at Atrium Drive, is a three-leg intersection. Atrium Drive provides access to an office park on the southbound side on NJ 73. Northbound left and U turns are accommodated by a left turn lane in the center median. At Greentree Road, the next signalized intersection approximately 2,100 feet to the south of Lincoln Drive, U and left turns are accommodated by a pair of far side jughandles through the office park and integrated into Lincoln Drive and Greentree Road.

The southbound NJ 73 jughandle at Lincoln Drive is 25 feet wide but is striped to accommodate only one lane. The jughandle intersects Lincoln Drive West 155 feet from NJ 73. There are five lanes on this leg of Lincoln Drive West: two 12 foot lanes carry traffic westbound away from the intersection while the three 12 foot approach lanes accommodate shared through/left turn movements, through traffic only and right turns only. The two westbound lanes taper to one lane as they pass the jughandle. Office and commercial uses line NJ 73 in this vicinity. Lincoln Drive West provides access to the back side of the offices along NJ 73 and to townhouse developments. Lincoln Drive East provides access to additional office and light industrial space.

Identified Problems:

During the AM peak period, queues on the NJ 73 southbound jughandle extend back onto the highway. Southbound vehicles on the jughandle have difficulty making left turns onto eastbound Lincoln Drive because of the queues on Lincoln Drive backing up from NJ 73. Because the jughandle is configured to accommodate only one lane of traffic, right turning vehicles can not pass around the vehicles queued up to turn left which further exacerbates this problem. The intersection of the southbound jughandle and Lincoln Drive West is close enough to NJ 73 that when five or six vehicles are in the eastbound Lincoln Drive

West left turn lane or through lane, vehicles can not turn left out of the jughandle. Vehicles have been observed bypassing this situation by continuing south on NJ 73 across Lincoln Drive and turning right into the parking lot of an office complex located on the southwestern corner of NJ 73 and Lincoln Drive. Vehicles negotiate through the parking lot to access eastbound Lincoln Drive via a right turn. This movement through the parking lot effectively serves as a far side jughandle.

The NJ 73 southbound shoulder, on a moderate downgrade, is dropped at a culvert just north of the Lincoln Drive jughandle entrance, requiring bicyclists to perform a merge at relatively high speeds into the travel lane. Located in the center of the shoulder approaching the culvert are double side-by-side drainage grates with longitudinal slots sufficiently long and wide enough to catch or deflect a bicycle wheel. This creates a hazardous condition for bicyclists.

Suggested Improvement Scenarios:

Restriping the southbound NJ 73 jughandle to provide separate left turn and right turn lanes will eliminate some of the queuing by allowing the right turns unobstructed access to Lincoln Drive West. Left turns from the jughandle present a problem because the stacking area on Lincoln Drive West between the intersection and the jughandle is short. One option to address this problem is to reduce the demand for southbound left or U turns at this intersection. A possible solution to reduce this demand is to provide an option for southbound left or U turns at another location. If Atrium Way is improved to a four-leg intersection and extended to intersect with a new connector road that would connect Church Road (CR 616) with Commerce Parkway, (see Figure 17) another potential option for these movements would be created. This would require right-of-way acquisition and impact an existing business along NJ 73 (equipment rental business). The new extension and connector road would provide access to areas currently served by the Lincoln Drive intersection. The extension and connector also has the potential to provide relief at the congested NJ 73 and Church Road intersection.

Shoulders throughout the length of Route 73 should be inspected for drainage grates that are not safe for bicycles, and those that are not should be replaced with efficient, bicycle-safe grates.

FIGURE 19: NJ 73 Southbound Off-Ramp to Lincoln Drive West

FIGURE 20: Lincoln Drive West Looking Toward NJ 73

12. NJ 73 AT GREENTREE ROAD

milepost: 25.35
Evesham Township, Burlington County

Existing Conditions:

NJ 73 carries two travel lanes in each direction in this vicinity and is divided by a grass median. U and left turns from NJ 73 are accommodated by a pair of far side jughandles through the office park and integrated into Lincoln Drive and Greentree Road. NJ 73 intersects Greentree Road at a signalized intersection. Left turn lanes are provided in both directions on Greentree Road for vehicles to access NJ 73. Greentree Road intersects Lincoln Drive East approximately 600 feet east of NJ 73 and intersects Lincoln Drive West approximately 600 feet west of NJ 73. Lincoln Drive operates as a loop street providing local access to the office and commercial uses inside the loop (see Figure 17).

Identified Problems:

Because of the proximity of the three intersections along Greentree Road, (Lincoln Drive East, NJ 73, Lincoln Drive West) there is some confusion among motorists concerning which traffic signal controls the upcoming intersection. As motorists on Greentree Road approach NJ 73 from either direction, the downstream signal at Lincoln Drive is also visible. Occasionally motorists mistakenly react to the signals in the distance rather than the appropriate one in the foreground. The adjacent signals are not simultaneously green and as a result motorists occasionally proceed according to a green signal in the distance when the appropriate signal is still red. Adding to the problem, when motorists are stopped on Greentree Road at NJ 73 the signal heads mounted on the mast arms are somewhat obscured by utility lines.

Suggested Improvement Scenarios:

- Replace existing signal heads along Greentree Road with optically programmed signal heads that are visible only to those motorists approaching the appropriate intersection.
- Placement of new mast-arms over the stop bar of Greentree Road on both sides of NJ 73.
- Interconnect these adjacent signals along Greentree Road and include them into the closed loop signal system along NJ 73.
- Improve the lane markings and signage on Greentree Road.
- The Lincoln Drive East, NJ 73 and Lincoln Drive West intersections with Greentree Road should have marked crosswalks and pedestrian pushbuttons and signal heads.

FIGURE 21: Greentree Rd. Looking West Toward Lincoln Drive West and NJ 73

13. NJ 70: SPRINGDALE ROAD (CR 673) TO WEXFORD DRIVE

milepost 6.12 to 6.61
Cherry Hill Township, Camden County

Existing Conditions:

This section of NJ 70 contains the transition area of the recent widening improvement along NJ 70. Just east of Springdale Road, NJ 70 narrows from three to two lanes. A grass median exists and several median openings serve U and left turns. At the signalized intersection of NJ 70 and Springdale Road, the NJ 70 approach legs provide a right turn lane and three through lanes. Westbound left turns are accommodated by a reverse jughandle. There is no accommodation for eastbound left turns at this intersection. This movement is commonly made by making a U turn at the first median opening east of Springdale Road then turning right onto northbound Springdale Road. This movement is problematic because there is very limited stacking area for the U turns and the median opening is located in the area where the highway tapers from three to two lanes. Another option for accessing northbound Springdale Road from NJ 70 is to use the near side jughandle which serves Greentree Road at milepost 5.74. Greentree Road intersects Springdale Road approximately 800 feet north of NJ 70.

Camden County College is building a new campus on the southwestern corner of NJ 70 and Springdale Road. Access will be right turn in and right turn out only from NJ 70 eastbound and right turn in and right turn out only from Springdale Road southbound. No left turns will be permitted into or out of this site from Springdale Road. This requires some circuitous movements for traffic headed from the campus to NJ 70 westbound or Springdale Road northbound.

The unsignalized intersection of Wexford Road/Birchwood Park Drive and NJ 70 permits right-in and right-out movements only. An opening in the median and a stacking lane provide an opportunity for eastbound traffic to make U turns. There is no through traffic movement permitted between Wexford Road and Birchwood Park Drive across NJ 70.

Identified Problems:

The primary problem in this section is the limitations for access across NJ 70. The intersection of NJ 70 and Springdale Road was recently reconstructed however there were no provisions for left turns from eastbound NJ 70 onto northbound Springdale Road. Left

turn and U-turn problems also exist along NJ 70 east of Springdale Road. Several small median openings remain after the reconstruction of NJ 70 west of Springdale Road. The first median opening is located in the area where the reconstructed NJ 70 tapers down from three travel lanes to two in the eastbound direction. The recently approved U-turns from an existing left turn stacking lane on eastbound NJ 70 at Wexford Drive /Birchwood Park Drive has operational problems. There is a conflict between the NJ 70 eastbound U-turns and the right turn traffic exiting Birchwood Drive to NJ 70 westbound.

Suggested Improvement Scenarios:

- The existing median openings and left turn/U turn treatments should be reevaluated and a coordinated plan should be developed. This evaluation should include: left turn treatment from eastbound NJ 70 to northbound Springdale Road, closure of existing median openings, construction of a center left/U turn lane at approximately milepost 6.5 and the evaluation of the operations at Wexford Drive/Birchwood Park Drive including possible signalization with center left turn lanes or reverse jughandles. This plan should also include examination of improved access to and from the Camden County College Campus.

14. NJ 70: I-295 TO COVERED BRIDGE ROAD/FRONTAGE ROAD

milepost 5.07 to 4.83
Cherry Hill Township, Camden County

Existing Conditions:

In this section, the number of travel lanes on NJ 70 changes throughout. In the eastbound direction, NJ 70 carries two travel lanes in the vicinity of Covered Bridge Road. As the I-295 southbound off-ramp merges in, it adds another through lane and the I-295 northbound off-ramp adds a fourth lane to NJ 70 which it carries down to Springdale Road. In the westbound direction, NJ 70 carries four travel lanes from Springdale Road to the I-295 northbound on-ramp where it drops a lane. As NJ 70 passes through the I-295 interchange in the westbound direction, it tapers from three travel lanes to two with the right lane becoming the I-295 southbound on-ramp. As the southbound I-295 off-ramp merges with westbound NJ 70 it carries a third lane into the signalized Frontage Road intersection. This lane only serves right turning traffic onto Frontage Road or traffic headed to the far-side jughandle which serves movements into the hotel, onto Covered Bridge Road or NJ 70 eastbound. Traffic from the I-295 southbound off-ramp must weave across this lane to proceed westbound on NJ 70.

The signalized intersection of NJ 70 and Frontage Road/Covered Bridge Road serves as the access/egress point for many destinations including the hotel, hi-rise condos and hi-rise apartments north of NJ 70 and the residential neighborhood south of NJ 70. Left turns/U turns from NJ 70 eastbound are accommodated by the near-side jughandle that utilizes a section of Pine Valley Road to access Covered Bridge Road. The Covered Bridge Road approach consists of a left turn only lane and a shared through/right turn lane. Frontage Road is one lane by direction but at its approach to NJ 70 the reverse jughandle merges with Frontage Road and adds a second lane. Traffic on Frontage Road is stop controlled at juncture with the jughandle. This approach to NJ 70 also consists of a left turn only lane and a shared through/right turn lane. The distance between where the jughandle merges in and NJ 70 is approximately 110 feet. Weaving movements between the jughandle traffic and Frontage Road must be accommodated in this area. Frontage Road traffic frequently has difficulty getting to the shared through/right turn lane and this situation causes queuing on Frontage Road.

Identified Problems:

Within the interchange, both directions of NJ 70 experience a weaving problem between the I-295 off and on ramps. The combination of the westbound lane drop and the weaving movement creates a hazardous condition.

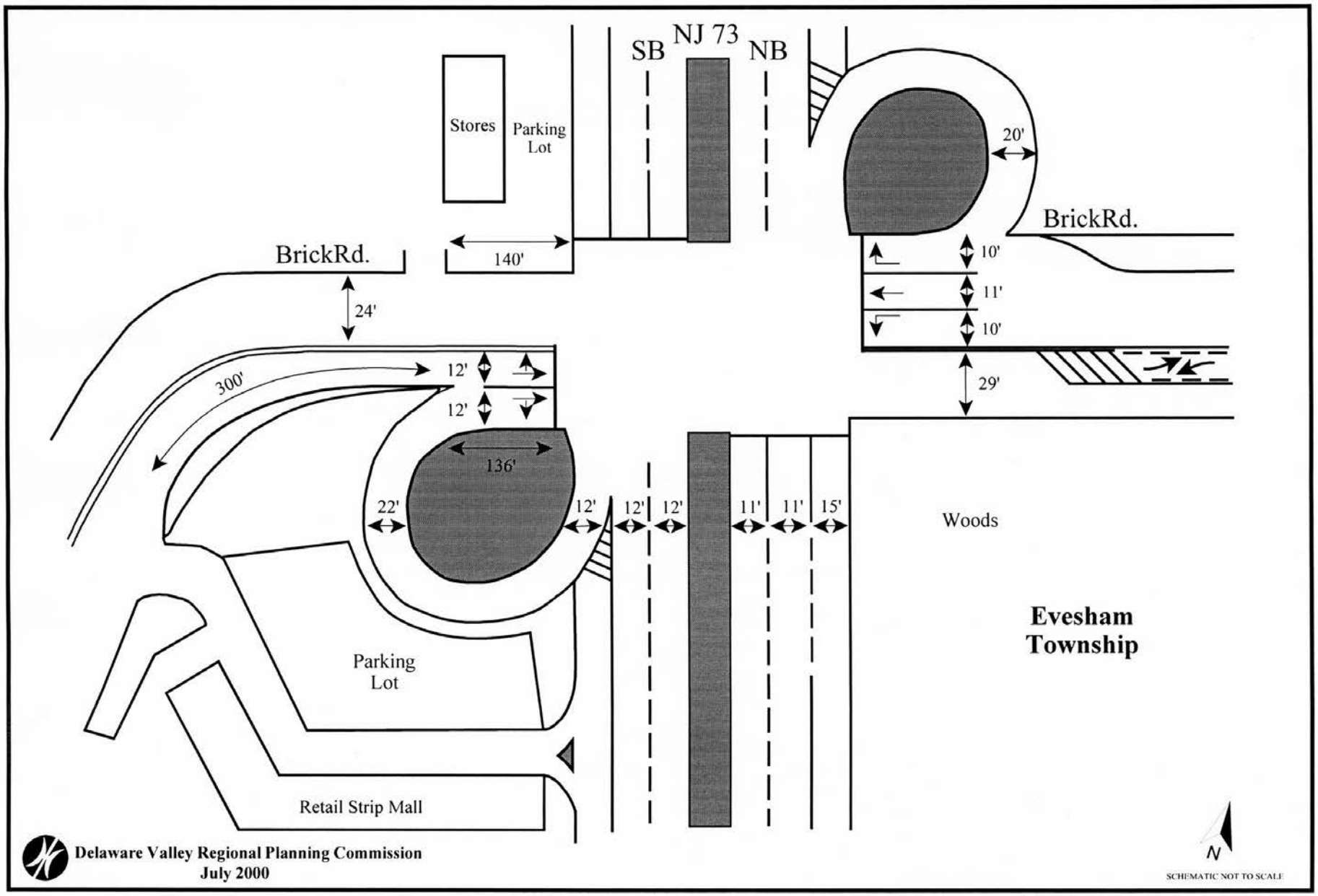
The intersection of NJ 70 and Covered Bridge Road/Frontage Road experiences significant congestion during both peak periods and can become congested throughout the day. The current alignment of the jughandle as it merges with the Frontage Road approach to the intersection along with the current traffic signal timing contribute to the congestion and safety problems. The alignment of the approach lanes on Frontage Road are slightly offset from the approach lanes on Covered Bridge Road which also adds to the operational problems at this location.

Suggested Improvement Scenarios:

- The third travel lane on westbound NJ 70 should be carried through to Frontage Road instead of being dropped at the I-295 southbound on-ramp. This will help the weaving movements through the interchange area. The wide gore area and shoulder could potentially be converted into the needed travel lane.
- To improve operations at the NJ 70 and Frontage Road/Covered Bridge Road intersection the jughandle should be enlarged and realigned in front of the existing hotel to create a new stop controlled intersection with Frontage Road and the access to the high-rise apartment complex. Frontage Road should be widened to provide three approach lanes to NJ 70. As there are over 250 peak hour left turns in both peak periods, a double left turn lane should be provided. The other approach lane would serve through and right turning movements. Covered Bridge Road should also provide three approach lanes. A protected left turn phase for the Frontage Road/Covered Bridge Road approaches should be included with the optimized signal timing.

FIGURE 22: NJ 70 Westbound Jughandle/Frontage Rd. Looking Toward NJ 70

FIGURE 23: NJ 73 and Brick Road



15. NJ 73 AT BRICK ROAD

milepost: 23.19
Evesham Township, Burlington County

Existing Conditions:

In this vicinity, NJ 73 carries two travel lanes and a shoulder in each direction and is separated by a grass median. At the signalized intersection with Brick Road the left turns are accommodated by reverse jughandles. In the eastbound direction, Brick Road approaches NJ 73 on a curved alignment and carries one travel lane but at its approach to NJ 73 the reverse jughandle merges with Brick Road and adds a second lane. The jughandle merges with Brick Road only 36 feet from the intersection creating a weaving conflict for the vehicles coming from the jughandle attempting to make a U turn to NJ 73 northbound and the vehicles from Brick Road attempting to go straight or turn right. On the eastern leg of the intersection, Brick Road carries one lane in each direction and is separated by a two way center left turn lane. At its approach to NJ 73, Brick Road consists of a left turn lane, a through lane and a right turn lane.

Identified Problems:

The primary problem is the conflict created by the weaving maneuvers between the vehicles coming off the NJ 73 southbound jughandle and the eastbound Brick Road traffic. Vehicles using the jughandle for a U-turn must negotiate across two lanes to get into the Brick Road left turn lane. Eastbound Brick Road traffic and jughandle traffic have been observed crossing the double yellow line into oncoming traffic to bypass queues in the eastbound through lane to get to the left turn stacking lane. A contributing factor to this weave problem is the fact that the jughandle joins Brick Road in a curved section.

A secondary problem in this vicinity is the use of the two-way center left turn lane in front of the hospital as a travel lane. Motorists in both directions have been observed traveling in this turning lane to bypass slower or right turning traffic.

Suggested Improvement Scenarios:

- To improve the operations of the eastbound Brick Road approach the curve should be smoothed and the NJ 73 southbound jughandle should be reconstructed to intersect Brick Road at a 90 degree, stop controlled intersection. The center line should be shifted to the north to allow for a third approach lane. The approach would consist of a left turn lane, a through lane and a shared through/left turn lane.

FIGURE 24: NJ 73 Southbound Jughandle at Brick Rd.

FIGURE 25: Brick Rd. Looking West at NJ 73

FIGURE 26: NJ 73 Looking South From Brick Rd.

FIGURE 27: NJ 73 Looking South From Brick Rd.

16. NJ 73: EVESHAM ROAD/MARLTON PARKWAY (CR 544) TO BRICK ROAD

milepost: 22.8 to 23.19
Evesham Township, Burlington County

Existing Conditions:

NJ 73 carries two travel lanes and a shoulder in each direction and is separated by a grass median through this section. Traffic operations at both the intersection with Evesham Road/Marlton Parkway and Brick Road are controlled by traffic signals. On the northbound NJ 73 approach to Brick Road, pavement markings permit the shoulder to be used as a right turn lane for approximately 280 feet from the intersection. There is no lane marking to transition this area from a shoulder to a turn lane. This lane also serves traffic headed to the reverse jughandle for left and U turns. On the southbound NJ 73 approach to Evesham Road, the shoulder is also converted to a right turn lane for approximately 220 feet from the intersection and is also used as an accel/decel lane for the entrances to the commercial uses along this section of NJ 73.. There are lane marking to transition the shoulder to a turn lane. This lane also serves traffic headed to the reverse jughandle for left and U turns.

Identified Problems:

Long queues in the NJ 73 northbound travel lanes approaching Brick Road prevent right turning vehicles from getting to the right turn lane. Therefore many motorists are turning onto the shoulder several hundred feet before the intersecting and bypassing slow moving or stopped vehicles in the travel lane. This creates a safety hazard and can lead to rear end or side swipe accidents when they conflict with vehicles properly entering the right turn lane. The same condition exists in the southbound direction approaching Evesham Road, however this maneuver is more problematic since there are several commercial driveways along this side. Vehicles traveling on the southbound shoulder not only conflict with downstream vehicles accessing the right turn lane but also with vehicles turning into and out of the adjacent commercial properties. Too many vehicles are using the shoulder as a travel lane to make right turns at the signalized intersections.

Suggested Improvement Scenarios:

- Lengthen the northbound and southbound right turn lanes in this section for an appropriate distance by upgrading the shoulders.
- Erect signs prohibiting the use of the shoulders as a travel lane and provide enforcement on a periodic basis.
- Accommodate northbound left turns at Evesham Road/Marlton Parkway through a jughandle or a center left turn lane.

FIGURE 28: NJ 73 and Signal Hill Drive

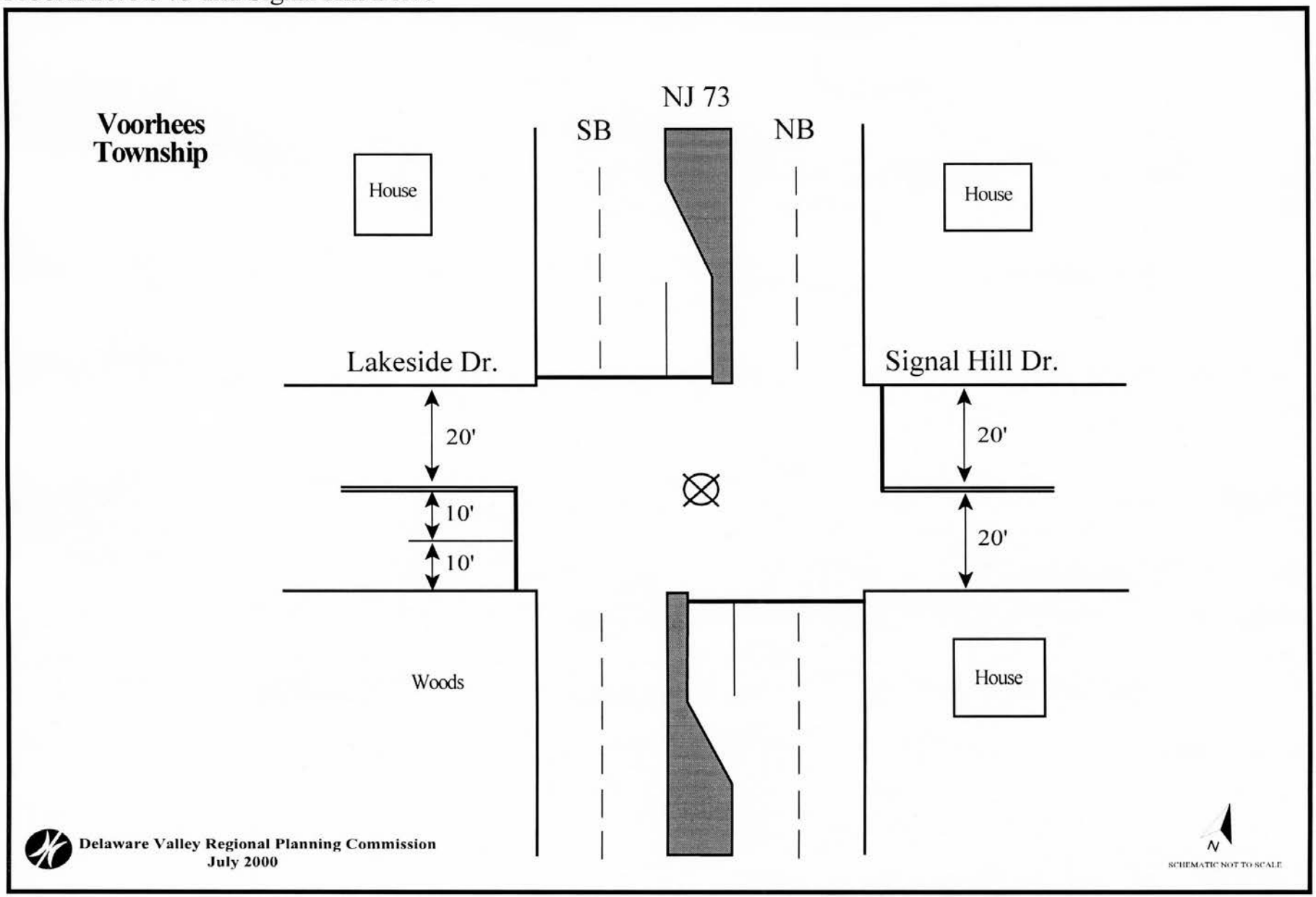


FIGURE 29: NJ 73 and Dutch Road

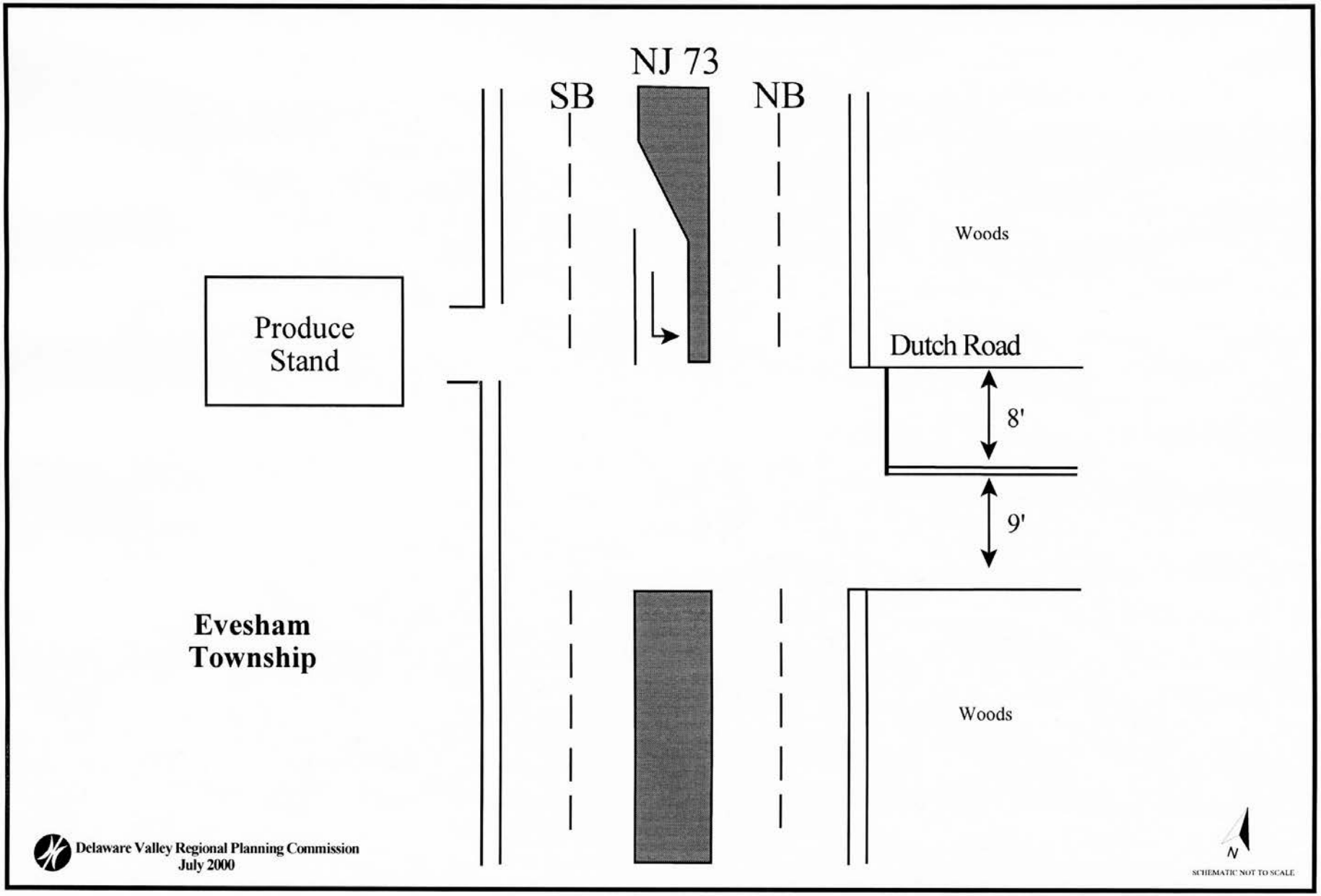
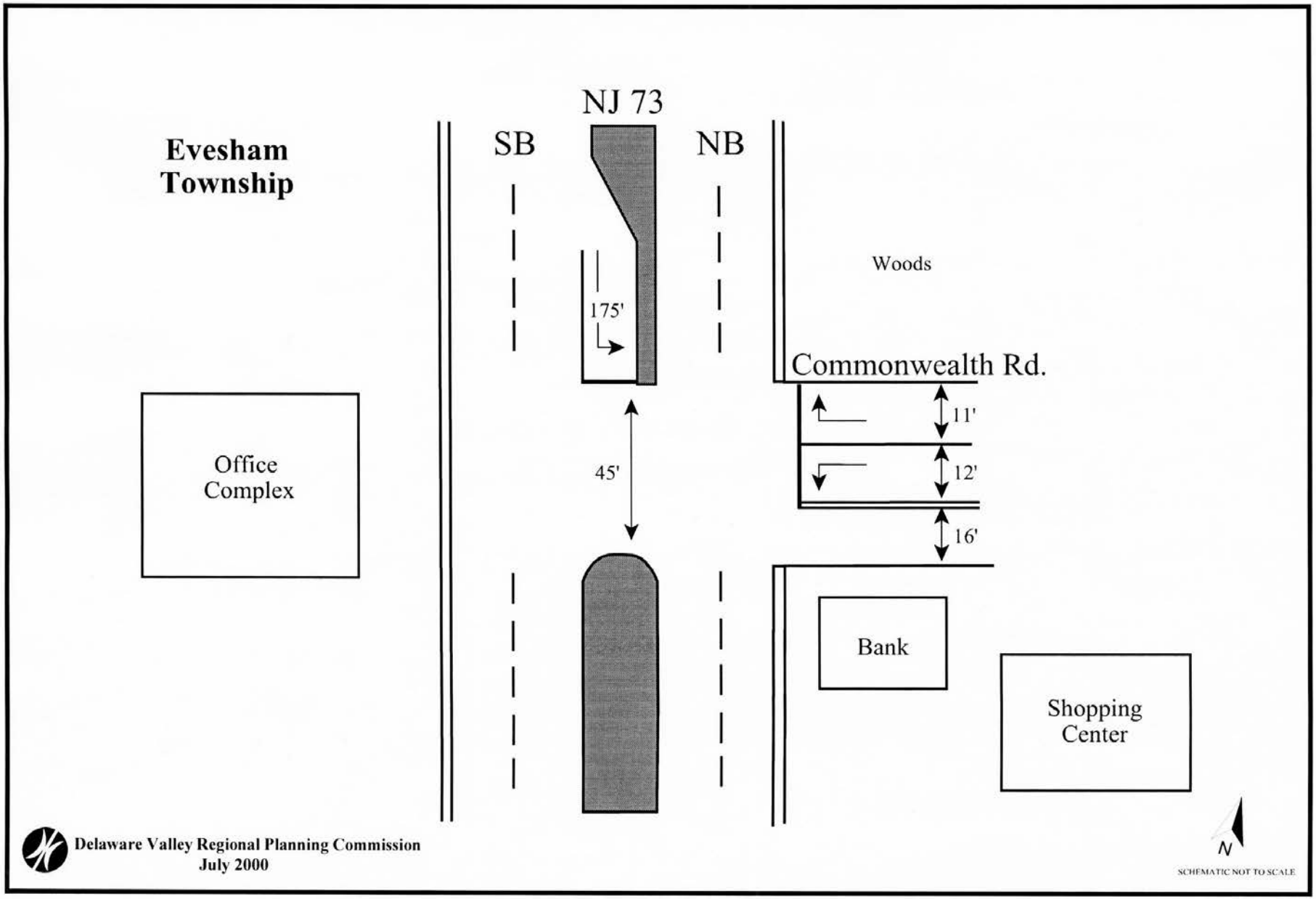


FIGURE 30: NJ 73 and Commonwealth Drive



17. NJ 73 AT SIGNAL HILL DRIVE, DUTCH ROAD, COMMONWEALTH DRIVE

milepost 19.65, milepost 21.69, milepost 22.52
Evesham Township, Burlington County and Voorhees Township, Camden County

Existing Conditions:

For discussion purposes, these three intersections have been grouped together because they exhibit generally similar characteristics. NJ 73 carries two travel lanes and a shoulder in each direction and is separated by a grass median in the vicinity of each of these intersections. All three roads carry relatively low to moderate traffic volumes to and from NJ 73. All three offer southbound NJ 73 left/U turn opportunities in the center median. Both Commonwealth Drive and Dutch Road are three-leg unsignalized intersections. The Signal Hill Road intersection is signalized and a fourth leg (Lakeside Drive) is provided. A northbound left/U turn lane is also available at Signal Hill Road. The Signal Hill Drive approach to NJ 73 consists of one 20 foot wide lane to serve right, through and left turn movements. The Lakeside Drive approach consists of two 10 foot lanes; a shared through/left turn lane and a shared through/right turn lane.

The Dutch Road approach to NJ 73 consists of one 8 foot wide lane to serve right and left turn movements. The sight distance is restricted on this approach because of the slight upgrade and the adjacent vegetation. Vehicles must pull up into the intersection to clearly see up and down NJ 73.

The Commonwealth Drive approach consists of an 11 foot right turn lane and a 12 foot left turn lane. Commonwealth Drive provides access to a supermarket and shopping center. An additional access to this shopping center is provided at the signalized three-leg intersection at Ardsley Drive which is located approximately 1,300 feet south on NJ 73.

Identified Problems:

- Left turning movements to and from these cross streets can be problematic during peak periods. As traffic flows increase on NJ 73, it becomes more and more difficult to find gaps in the traffic stream for vehicles to complete their left turn. Vehicles have been observed turning left from Commonwealth Drive through a gap in northbound traffic then waiting in the median area for a gap in the southbound traffic. This maneuver limits the visibility of the motorists waiting in the southbound left turn lane for a gap in northbound traffic so they can turn onto

Commonwealth Drive. This situation also occurs at Dutch Road.

- Because of the width of NJ 73 there is occasionally some confusion between opposing left turning vehicles at Signal Hill Drive concerning whether they should pass each other on the right or on the left.

Suggested Improvement Scenarios:

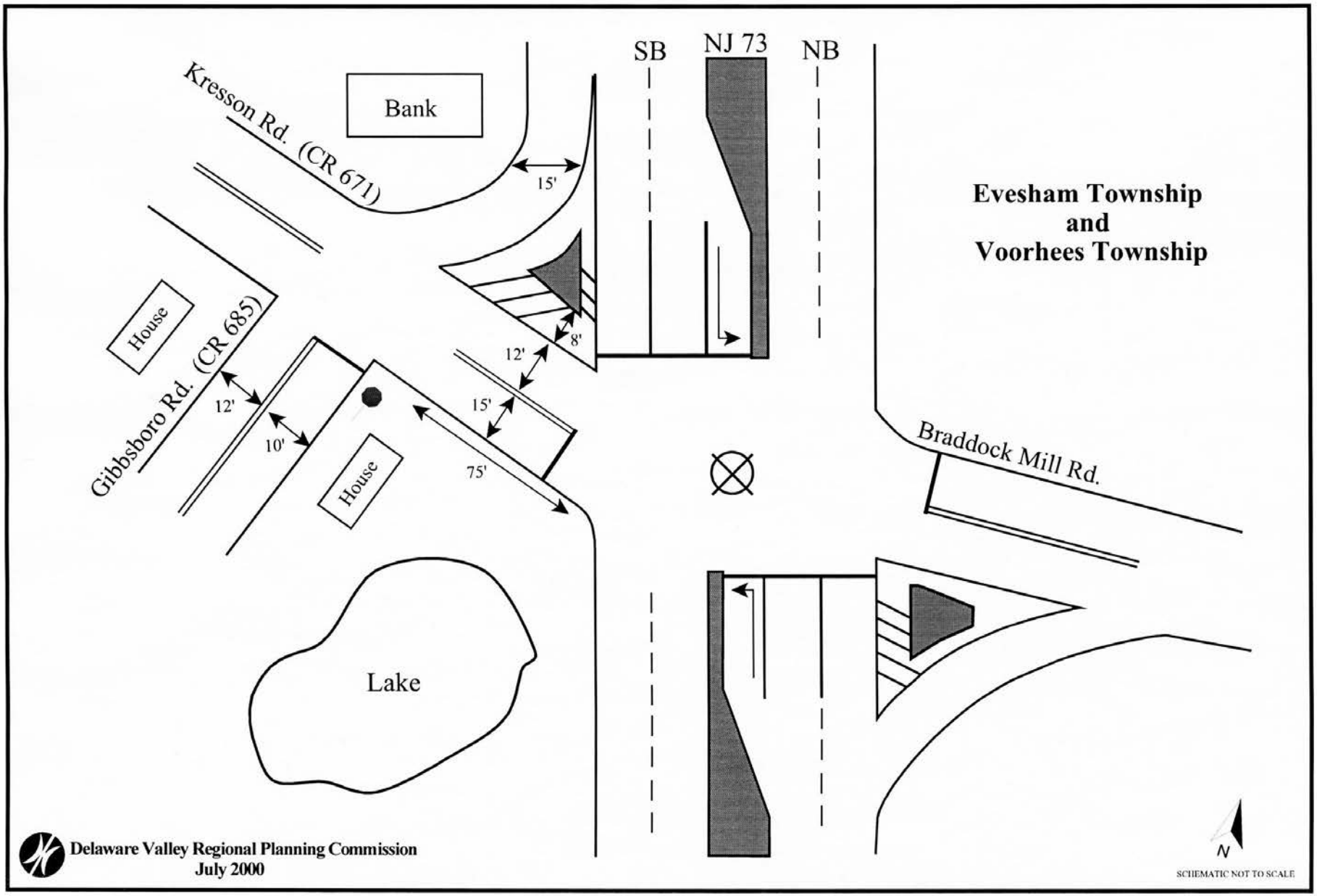
- Install dashed lane markings for left turns from Signal Hill Drive across NJ 73 to direct left turning vehicles properly through the intersection.
- Cut back the vegetation at Dutch Mill Road to improve the sight distance.
- Evaluate the impacts of closing the median openings at these locations
- Left turns from the shopping center located between Commonwealth Drive and Ardsley Drive to NJ 73 southbound are better accommodated at and are encouraged to use the signalized intersection at Ardsley Drive.

FIGURE 31: Signal Hill Drive Looking Toward NJ 73

FIGURE 32: Dutch Rd. Looking Toward NJ 73

FIGURE 33: Commonwealth Drive Looking Toward NJ 73

FIGURE 34: NJ 73 and Kresson Road/Braddock Mill Road



18. NJ 73 AT KRESSON ROAD (CR 671)/ BRADDOCK MILL ROAD

milepost: 21.43

Evesham Township, Burlington County and Voorhees Township, Camden County

Existing Conditions:

NJ 73 carries two travel lanes in each direction and is separated by a grass median in the vicinity of this signalized intersection. Left turn movements are accommodated by center left turn lanes. Kresson Road and Braddock Mill Road intersect NJ 73 on an angle and are slightly offset. Braddock Mill Road carries one lane in each direction and its one approach lane accommodates left, through and right turn movements. Kresson Road also carries one lane in each direction and its one approach lane also accommodates all movements. Gibbsboro Road (CR 685) intersects Kresson Road approximately 75 feet west of NJ 73 and brings a 10 foot approach lane into the intersection to serve right and left turns. The southbound NJ 73 channelized right turn lane intersects Kresson Road almost directly across from Gibbsboro Road. Movements from this right turn lane must merge onto westbound Kresson Road then turn left to access Gibbsboro Road. A branch of Barton's Run travels under the intersection through a culvert to Kresson Lake which is located in the southwest quadrant of the intersection.

Identified Problems:

This intersection experiences considerable congestion on Kresson Road and on Gibbsboro Road during both peak periods. The obtuse angle of the intersection with NJ 73 and the proximity of the adjacent intersection of Kresson Road and Gibbsboro Road contribute not only to the congestion but also creates a hazardous condition for vehicles turning left onto Gibbsboro Road. A queue of three or four vehicles on eastbound Kresson Road prevents vehicles from southbound NJ 73 or westbound Braddock Mill Road from accessing Gibbsboro Road. A vehicle heading south NJ 73 towards Gibbsboro Road must use the channelized right turn lane, merge onto westbound Kresson Road and immediately turn left onto Gibbsboro Road. If this vehicle is restricted from turning left onto Gibbsboro Road because of queues on eastbound Kresson Road, the channelized right turn lane begins to queue up and an unsafe condition occurs. The inability to turn left onto Gibbsboro Road from westbound Kresson Road leads to a stacking condition which is conducive to rear end accidents.

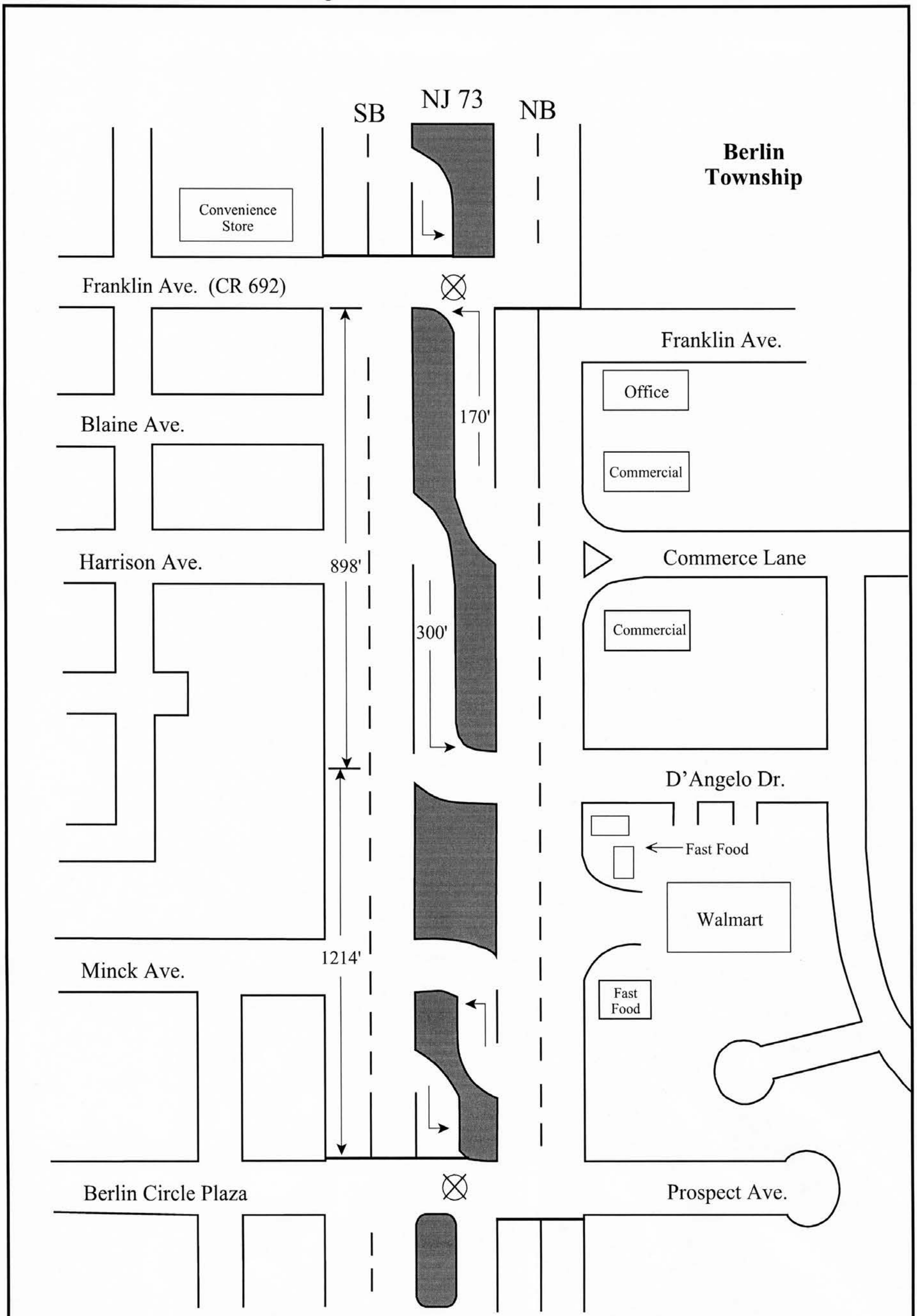
Suggested Improvement Scenarios:

- Realign the channelized right turn lane to line up across from Gibbsboro Road. This creates a through movement for southbound NJ 73 traffic to Gibbsboro Road instead of a left turn. This right turn lane should be wide enough at its intersection with westbound Kresson Road to permit unobstructed right turning movements.
- Install additional "Do Not Block Intersection" signs on Kresson Road just west of Gibbsboro Road and provide cross hatching on the eastbound side of Kresson Road at the area in front of Gibbsboro Road. This will relieve queuing on westbound Kresson Road and facilitate movements onto Gibbsboro Road.

FIGURE 35: NJ 73 Southbound Off-Ramp Looking Toward Gibbsboro Rd.

FIGURE 36: Kresson Rd. Looking Toward NJ 73

FIGURE 37: NJ 73: Franklin Road to D'Angelo Drive



Delaware Valley Regional Planning Commission
July 2000

19. NJ 73: FRANKLIN AVENUE (CR 692) TO D'ANGELO DRIVE

milepost: 18.37 to 18.20
Berlin Township, Camden County

***Existing Conditions*:**

NJ 73 carries two travel lanes in each direction through this area. The northbound and southbound directions are divided by a grass median. Traffic signals are located at Franklin Avenue and at Prospect Avenue/Berlin Circle Plaza Shopping Center (approximately 2,115 feet apart). Left turn movements are accommodated via left turn lanes at Prospect Avenue/Berlin Circle Plaza Shopping Center, Mink Lane and Franklin Avenue in the northbound direction. The NJ 73 northbound left turn lane at Franklin Ave is 170 feet long and serves both U and left turn movements. In the southbound direction, left turn movements are accommodated via left turn lanes at Franklin Avenue, D'Angelo Drive and Prospect Avenue/Berlin Circle Plaza Shopping Center. The NJ 73 southbound left turn lane at D'Angelo Drive is 300 feet long and primarily provides access to the commercial uses along NJ 73 and the business park behind the commercial uses. Franklin Avenue and D'Angelo Drive are approximately 900 feet apart. The northbound left turn lane at Franklin Avenue backs up to the southbound left turn lane at D'Angelo Drive. This eliminates any possibility of extending either left turn lane. D'Angelo Drive is approximately 1215 feet north of Prospect Avenue/Berlin Circle Plaza Shopping Center.

The adjacent land use throughout this section is primarily commercial with some small office buildings. D'Angelo Drive and Commerce Lane provide direct access to light industrial/business parks located behind the commercial uses fronting NJ 73.

***Identified Problems*:**

- This section of NJ 73 experiences significant congestion in the peak periods and can experience intermittent congestion throughout the day. Due to the incidence of shopping and other commercial uses, this section is also frequently congested during the weekends. On summer weekends, NJ 73 also serves as a route to the New Jersey Shore and recreational through traffic adds to the already congested conditions.
- Travel patterns to and from the Berlin Business Park and the commercial uses (Walmart, Sears Hardware, fast food outlets) north of Prospect Avenue are focused on using NJ 73 while there are other alternatives. D'Angelo Drive and Commerce Lane provide connections to Cooper Road (CR 675) which can be used to reach NJ 73 at less

congested locations. Left turns from D'Angelo Drive to southbound NJ 73 are not permitted. Traffic exiting the business park at D'Angelo Drive or the commercial uses which is destined to Franklin Ave or NJ 73 south must head north on NJ 73 and use the left turn lane at Franklin Ave. Queues from the northbound NJ 73 left turn lane at Franklin Ave frequently spill back into the through lane effectively reducing NJ 73 to one northbound travel lane in this area. During many times of the day, the demand for this movement can not be accommodated by the existing left turn lane or signal timing. Lengthening the northbound left turn lane is problematic because it backs up to the southbound left turn lane extending from D'Angelo Drive.

- The southbound NJ 73 approach to Franklin Ave experiences a safety problem with right turn movements. The approach contains two through lanes and a shoulder. Although the shoulder is signed to prevent vehicles from using it as a right turn lane, there are frequent occurrences when vehicles will travel up the shoulder to make a right turn at the intersection. This creates a safety problem for the right turning vehicles which have stayed in the travel lane as they approach the intersection. Angle accidents can occur when a vehicle making a proper right turn from the travel lane conflicts with a vehicle shooting up the shoulder trying to bypass the queue.

***Suggested Improvement Scenarios*:**

- Encourage alternate access to NJ 73 from the business park and commercial uses on the northbound side of NJ 73 between Prospect Avenue and Franklin Avenue by installing signs on Commerce Lane and D'Angelo Drive. These signs should direct traffic to use Cooper Road (CR 675) to reach NJ 73. This alternate routing could prove particularly helpful during the Berlin Circle Elimination project.
- Discussions have centered around the installation of a traffic signal and the creation of a median opening on NJ 73 at D'Angelo Drive. This improvement would permit left turns from the business park and commercial areas onto southbound NJ 73. This southbound traffic would no longer be forced to travel north on NJ 73 and make a U-turn at Franklin Avenue. The operations at the Franklin Avenue intersection would be improved and expectations are that the northbound left turn lane would not spill back into the travel lane. This improvement however, is not without concerns; D'Angelo Drive is 900 feet south of Franklin Ave and 1,215 feet north of Prospect Avenue. The signal spacing and the impacts of a third signal on the flow of traffic through this area need to be evaluated.
- The safety problem on the southbound NJ 73 approach to Franklin Ave can be

addressed by the addition of a southbound right turn lane on NJ 73. This could be done either by converting the existing shoulder into a turn lane or by widening this approach to add a turn lane and retain the shoulder. This improvement would also add a small capacity increase to the intersection and would be expected to help the overall operations of the intersection.

FIGURE 38: NJ 73 Looking South Near Franklin Ave.

FIGURE 39: NJ 73 Looking North Toward Franklin Ave.

20. US 30 AT MILFORD ROAD/BERLIN CROSS KEYS ROAD (CR 689)

milepost: 16.51
Berlin Borough, Camden County

Existing Conditions:

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.

Identified Problems:

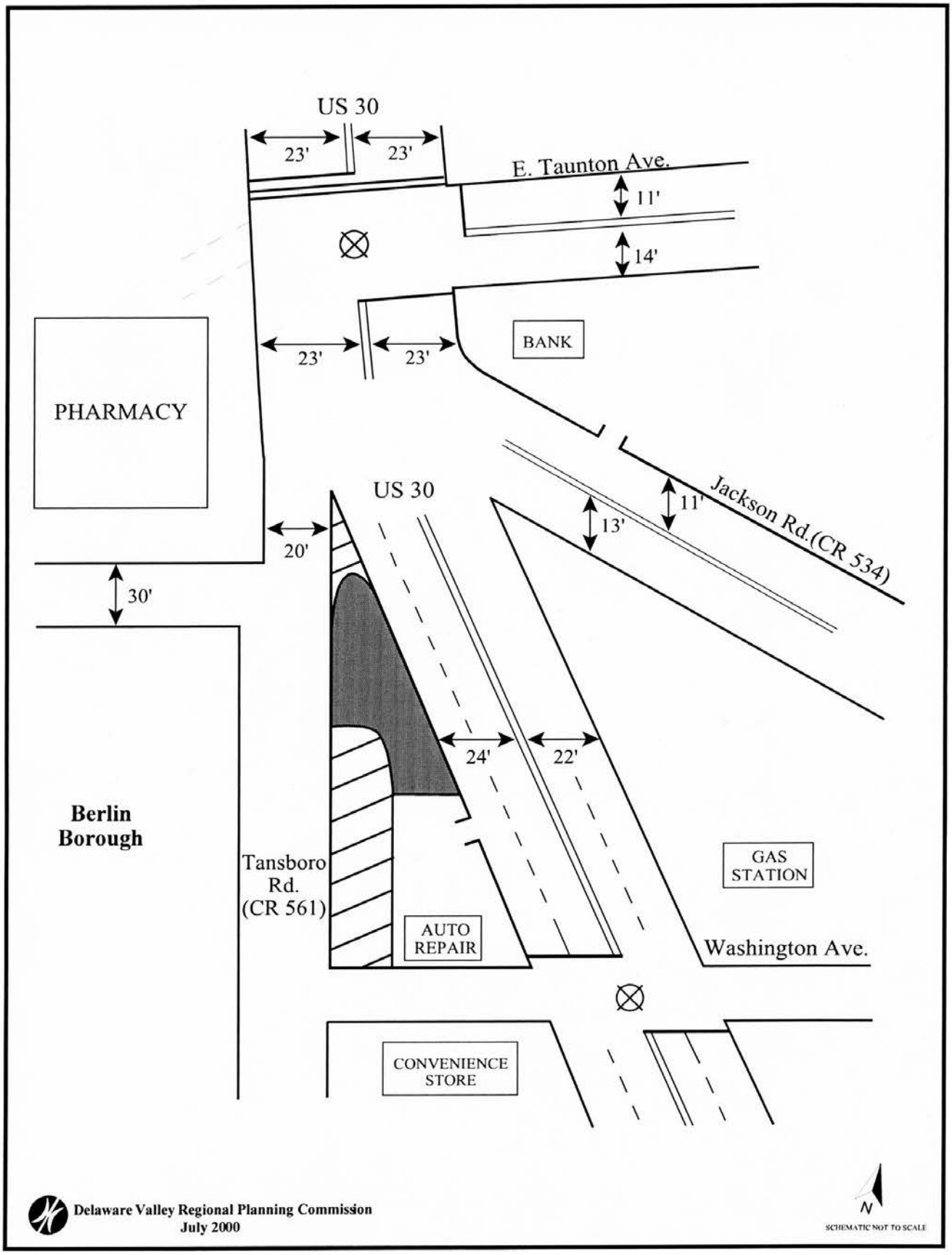
The southbound Milford Road approach to US 30 is stripped for one lane. Left turning vehicles frequently line up in the center of the approach lane preventing through or right turning vehicles from entering the intersection. This approach leg experiences significant congestion in the peak periods.

Suggested Improvement Scenarios:

- Restripe the Milford Road Approach to provide an exclusive left turn lane and a shared through and right turn lane. Since the existing cartway is 36 feet wide, the centerline could be shifted to provide two 12 foot approach lanes and one 12 foot departure lane. The stop bar should be pushed back slightly to provide an adequate turning radius for the westbound US 30 right turns. This short term, quick fix project would be an interim improvement since this intersection will be addressed in NJ DOT's Berlin Circle Elimination Project.

FIGURE 40: Milford Rd. Looking South Toward US 30

FIGURE 41: US 30, CR 561, and CR 534



21. US 30: JACKSON ROAD (CR 534) TO EAST TAUNTON AVENUE

milepost: 16.95 to 16.98
Berlin Borough, Camden County

Existing Conditions:

West of East Taunton Avenue, US 30 carries one travel lane in each direction and allows on-street parking. Between East Taunton Ave 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 new 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.

Identified Problems:

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.

Suggested Improvement Scenarios:

- 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
- 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.

FIGURE 42: US 30 Eastbound at CR 561 and CR 534

FIGURE 43: US 30 Westbound at Taunton Ave.

22. BERLIN UNDEVELOPED PARCELS ON US 30

milepost: 17.46 to 17.77
Berlin Borough**,** Camden County

Existing Conditions:

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. Pine Avenue is a through street that connects US 30 to Jackson Road (CR534) and Florence Avenue is a through street that connects US 30 to Tansboro Road (CR 561). 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.

Identified Problems:

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.

Suggested Improvement Scenarios:

- Berlin Boro 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 Ave or the entrance to the Berlin Shopping Center).

FIGURE 44: Heathermere Area Map

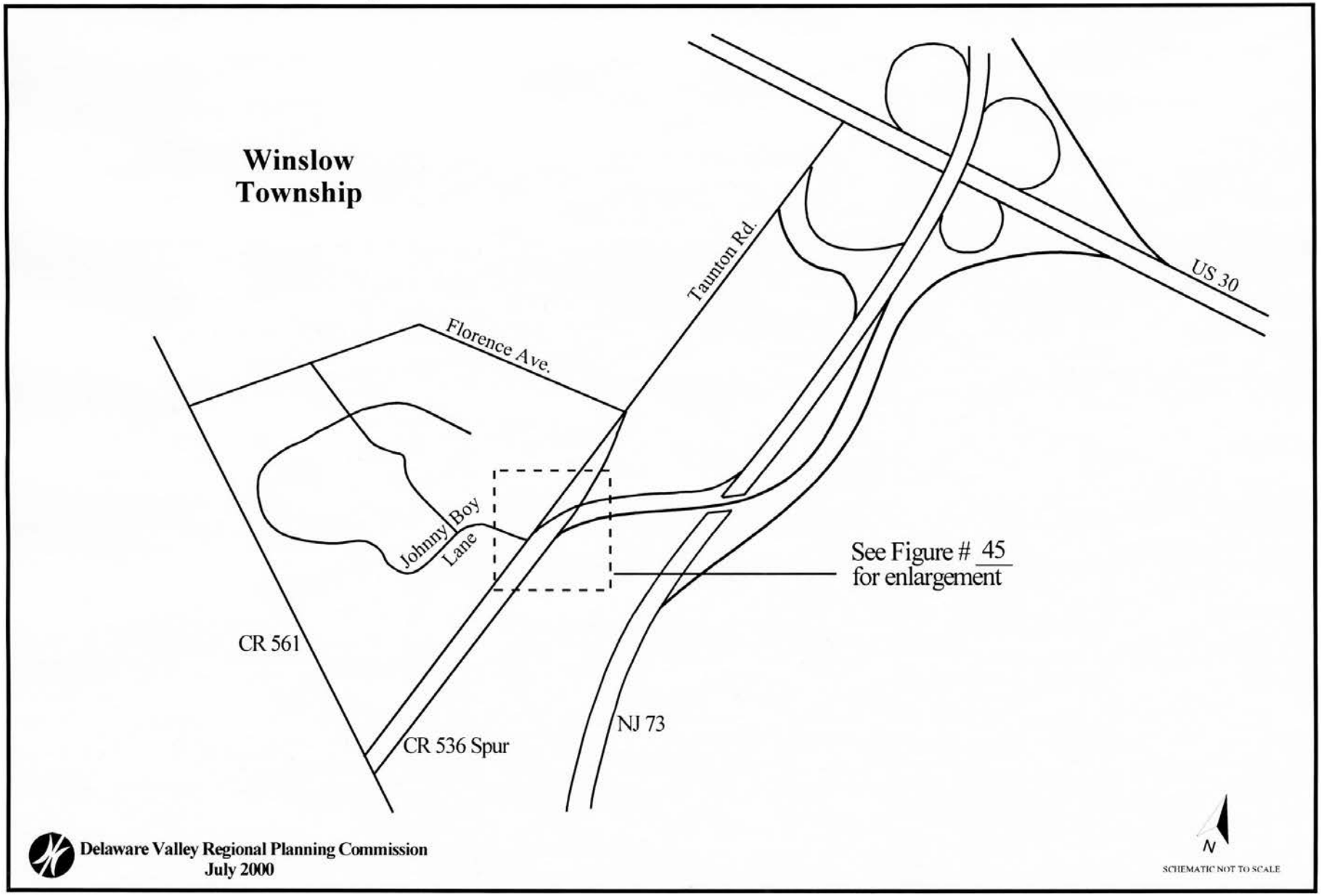
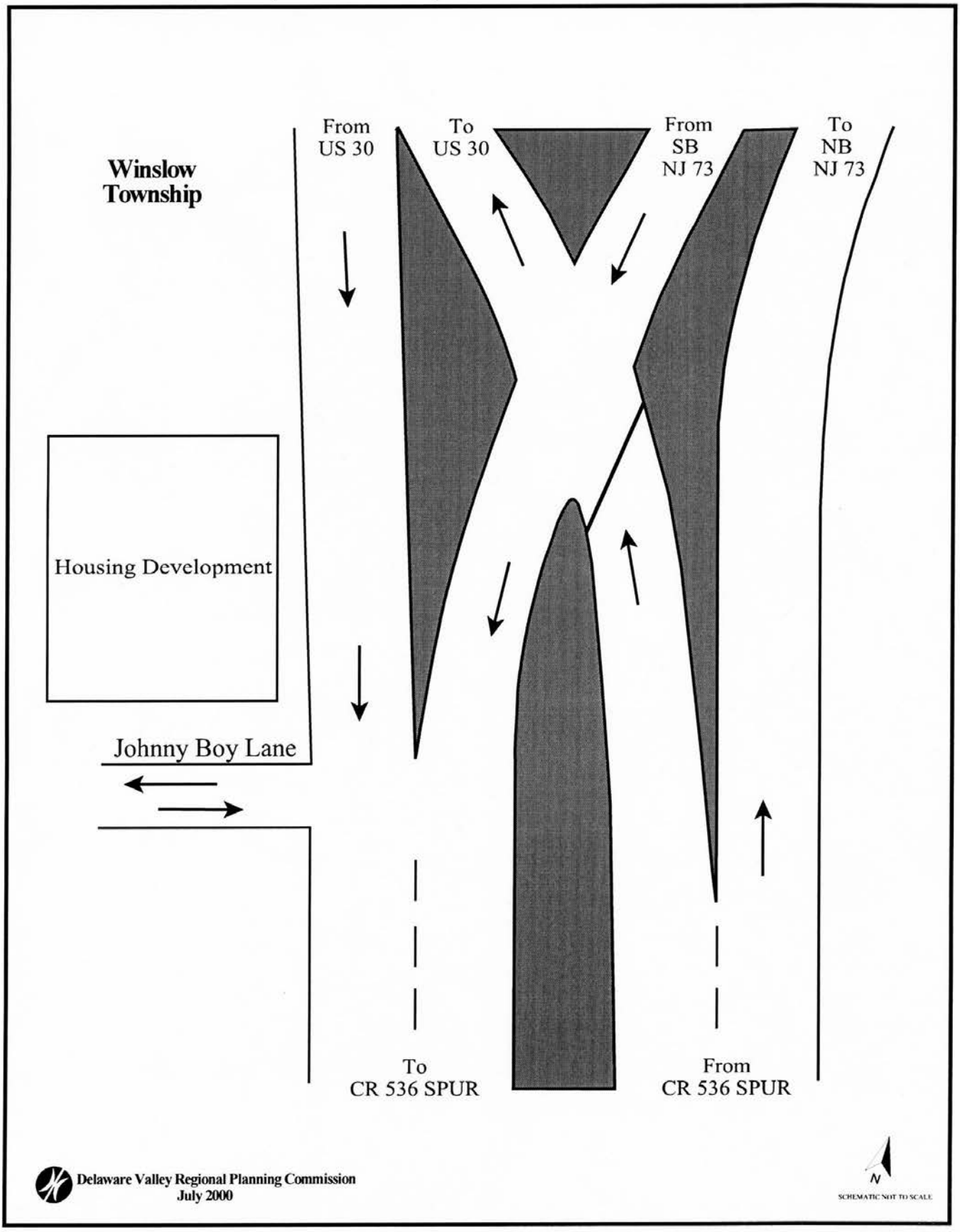


FIGURE 45: NJ 73, US 30, and CR 536 Spur



23. TAUNTON ROAD (CR 536 spur): NJ 73 RAMPS TO TANSBORO ROAD (CR 561)
milepost: 6.76 to 7.11
Winslow Township, Camden County

Existing Conditions:

This four lane section of Taunton Road is separated by a grass median. North of this section, Taunton Road transitions back to one lane by direction until its intersection with US 30. Taunton Road intersects Tansboro Road at a signalized intersection and carries two travel lanes in each direction through the intersection. Left turns from southbound Taunton Road are accommodated by a center left turn lane. The southbound left turn lane is channelized; separated from the through lanes by a raised concrete divider. Taunton road carries one lane in each direction south of Tansboro Road. The ramps to and from NJ 73 account for the second travel lane in each direction in this vicinity.

A residential development (Heathermere) is under construction on the west side of Taunton Road. The access to and from this development (Johnny Boy Lane) intersects Taunton Road adjacent to where the NJ 73 southbound off-ramp merges with Taunton Road.

Identified Problems:

Although there are signs prohibiting right turns from the southbound NJ 73 off-ramp onto Johnny Boy Lane, there are no physical obstructions to prevent this movement from taking place and vehicles have been observed slowing down on this ramp to make this turn. No left turns are permitted from Johnny Boy Lane onto Taunton Road because at this location, Taunton Road carries two southbound travel lanes and is separated by a grass median. Temporary measures have been taken to prevent vehicles from exiting Johnny Boy Lane and crossing the median to turn left on Taunton Road towards NJ 73 or US 30. During field views, evidence that this movement was still taking place was observed. Another unpermitted movement that was observed was vehicles headed northbound on Taunton Road crossed over the NJ 73 southbound off ramp and made a U turn onto southbound Taunton Road to access the Heathermere development. Until motorists have other options to access this development or permanent physical obstructions can be installed, the illegal, unsafe movements to and from this development will continue. A channelized left/U turn lane exists on southbound Taunton Road at the signalized intersection with Tansboro Road. Vehicles coming out of Heathermere on Johnny Boy Lane could use this left/U turn to safely get to northbound or southbound NJ 73 or to eastbound and westbound US 30.

Suggested Improvement Scenarios:

- Evaluate the potential for additional access points into Heathermere from Tansboro Road, Florence Road or from US 30.
- Install concrete curbing as an extension of the divider between the southbound NJ 73 off-ramp and southbound Tansboro Road to prevent vehicles from turning right from the ramp into Heathermere.
- Install concrete curbing around the center median between northbound and southbound Taunton Road to prevent traffic from Johnny Boy Lane from crossing the median to turn left to US 30 or northbound NJ 73.
- Provide physical improvements to the intersection of Taunton Road and Tansboro Road such as resurfacing, new lane markings and an improved radius for the southbound Taunton Road left/U turn lane. Construct a left turn lane in the center median for northbound Taunton Road.

FIGURE 46: Taunton Rd. Looking South at Johnny Boy Lane

FIGURE 47: Johnny Boy Lane Looking Toward NJ 73 Ramps

FIGURE 48: NJ 73 Southbound Off-Ramp at Johnny Boy Lane

24. NJ 73 AT HAYES MILL ROAD/FACTORY ROAD (CR 710)

milepost 14.5
Winslow Township, Camden County

Existing Conditions:

NJ 73 carries two travel lanes in each direction through this area and is separated by a grass median. A traffic signal controls the operations at the intersection with Hayes Mill Road/Factory Road. Left turns from NJ 73 are accommodated by center left turn lanes in the median. The primary land uses along NJ 73 and along Hayes Mill Road/Factory Road are wooded, undeveloped and agricultural. Hayes Mill Road/Factory Road carries one lane by direction. The 28 foot cartway makes no provision for shoulders. Cedarbrook Road (CR 561) intersects Hayes Mill Road/Factory Road approximately 2,000 feet west of NJ 73 at an unsignalized intersection. This intersection is stop controlled with Cedarbrook Road allowed the free flow movement. The eastern leg of the intersection is at an oblique angle and slightly offset from the western leg.

Identified Problems:

Commercial development is envisioned on either side of Hayes Mill Road between NJ 73 and Cedarbrook Road (CR 561). A town center type development has been discussed. The current configuration of Hayes Mill Road is not adequate to handle the volumes of traffic expected to be generated by this type of development.

Suggested Improvement Scenarios:

- Winslow Township and Camden County should evaluate the cumulative impacts of any proposed developments for this area and prepare a circulation plan to address any traffic concerns. Both the intersection with NJ 73 and with Cedarbrook Road will need to be upgraded. The evaluation of left turn treatments should be evaluated including the extension of the existing center left turn lanes or the construction of jughandles at NJ 73 and the reconstruction/realignment at Cedarbrook Road. The township and county should consider extending the improvements west along Factory Road to Williamstown New Freedom Road (CR 536 spur). The township and county also should work with the developer to identify and fund the appropriate improvements.

FIGURE 49: NJ 73 Looking West Toward Hayes Mill Rd./Factory Rd.

25. NJ 73: PUMP BRANCH ROAD (CR 536) TO NEW BROOKLYN CEDARBROOK ROAD (CR 561c)

milepost 11.21 to 10.38
Winslow Township, Camden County

Existing Conditions:

NJ 73 carries two travel lanes and a shoulder in each direction through this section. A traffic signal controls the operations at the intersection with Pump Branch Road. Turns from NJ 73 onto Pump Branch Road are accommodated by near side jughandles. The primary land uses along NJ 73 are wooded, undeveloped and some scattered residential uses. A liquor store is located at the intersection with Pump Branch Road. Left turn only lanes are provided on the Pump Branch Road approaches to NJ 73. CR 561c intersects the southbound side of NJ 73. Within the curved segment of this section, NJ 73 passes under a freight rail bridge.

Identified Problems:

The signal at the intersection of CR 536 and NJ 73 provides a short green time for the Pump Branch Road approaches. The configuration of the approaches on Pump Branch Road creates some confusion as vehicles approach NJ 73. The short stacking area and the short green time for eastbound Pump Branch Road results in queuing which can make it difficult for vehicles to turn left from the southbound NJ 73 jughandle. The lack of lighting in the area creates a hazardous situation.

Suggested Improvement Scenarios:

- Install loop detectors on Pump Branch Road to make the traffic signal responsive to the cross street traffic. The actuated signal timing should provide an extended green phase which is sufficient to reduce the queuing on Pump Branch Road.
- Install reflectorized raised pavement markers on the center line and on the edge line, chevrons (W1-8 - Manual on Uniform Traffic Control Devices) in the curved area and street lights to increase the night time/bad weather visibility through this section.

FIGURE 50: Pump Branch Rd. Looking East at NJ 73

FIGURE 51: NJ 73 Looking South at Pump Branch Rd.

26. US 30: GARFIELD AVENUE (CR 718) TO CENTER AVENUE (CR 680)

milepost 21.68 to 22.74
Chesilhurst Borough, Camden County

Existing Conditions:

NJ 73 carries two travel lanes in each direction through this area. A traffic signal controls the operations at the intersection with Garfield Avenue. Several cross streets intersect US 30 at unsignalized intersections. There are no shoulders along US 30 in this section and the utility poles are relatively close to the travel lanes. The primary land uses along this section of US 30 are wooded, undeveloped and some scattered residential uses.

Identified Problems:

The intersection of US 30 and Garfield Avenue has a sight distance problem for eastbound traffic as a result of the hill on US 30 west of the intersection. The high speeds combined with the lack of bus pull-offs along this stretch of US 30 occasionally creates hazardous conditions when NJ Transit busses stop along the travel lane to pick up or discharge passengers. The police department indicated that there have been occurrences of vehicles running off the road and striking utility poles along US 30 in this section. Anecdotal evidence from the police department indicate that these accidents frequently involve motorists returning from Atlantic City at night.

Suggested Improvement Scenarios:

- An accident analysis of this section of US 30 should be conducted to determine if any accident patterns occur related to vehicles running off the road and hitting fixed objects (e.g. utility polies)or accidents involving busses stopped to pick-up or discharge passengers.
- NJ Transit should consider the development of bus stop areas with pull offs to provide safety benefits and to lessen the impacts on the traffic flow.
- Install "signal ahead signs" (W3-3 - Manual on Uniform Traffic Control Devices) on eastbound US 30 approaching Garfield Avenue to warn approaching motorists of the upcoming signalized intersection.
- Extend the all-red phase of the signal timing plan to allow more time for the Garfield Road traffic to clear the intersection.

TABLE 3
Previously Identified Transportation Problems

DVRPC FY 2001-2004 TRANSPORTATION IMPROVEMENT PROGRAM
NJ DOT FY 2001-2002 STUDY AND DEVELOPMENT PROGRAM
DVRPC NON-PIPELINE TRANSPORTATION PROBLEMS - JULY 2000
DVRPC'S YEAR 2020 LONG RANGE PLAN
NJ DOT 1994 CORRIDOR NEEDS ASSESSMENT STUDY

T1 NJ 73 and NJ 70
Marlton Circle
DB# 567
This project is located in Evesham Township and calls for the elimination of the Circle.

T2 NJ 73: Fox Meadow/Fellowship Road
Vicinity of Route 41 to vicinity of Main Street (CR 537)
DB# 94068
This project in Maple Shade Township may include widening of Route 73, intersection improvements at Route 73 and Fox Meadow, realignment of the ramps at Main Street and bridge replacement at Main Street.

T3 Burlington County Computerized Signal Control, Phase IV
CR 607, CR 616, CR 673, CR 674
DB# D9911
Improved signalization and operation at 25 county intersections. This ITS project will be a traffic responsive signal system, consisting of 24 intersections--9 on CR 607, 4 on CR 616, 6 on CR 674, 5 on CR 673.

T4 US 130 Corridor
Airport Circle to CR 541 (High Street)
DB# 95078B
This project calls for a corridor deficiency study along US 130 from Pennsauken to Burlington City proposing comprehensive corridor rehabilitation and operational improvements, including, where appropriate, pavement rehabilitation, intersection

improvements, drainage improvements, development of an access management plan, pedestrian improvements, signing and lighting improvements, and roadside rehabilitation. The study supports a county-led corridor planning effort.

T 5 Traffic Signal Contract 16

US 30, NJ 38, NJ 70, and NJ 73

DB# 713

This project will provide for the implementation of a computerized traffic system which will tie into the Traffic Operations Center South. Major items of work include installation of variable message signs, closed circuit television cameras, highway advisory radio, and accident management system. In addition 70 miles of fiber optic cable will be installed to control traffic signals on these highways.

T6 US 30 Bridges

Bridges over Atlantic City Rail Line and Albertson's Branch

DB# 157

This project is located in Winslow Township and involves the replacement of two existing structures which carry two 10-foot lanes and a zero to 6-foot shoulder in each direction with two new structures carrying four 12-foot lanes and two 14-foot shoulders. The 14-foot shoulders will provide bicycle lanes as well as room for a new median barrier curb.

T7 NJ 73

Berlin Circle

DB# 93109

This project is located in Berlin Boro and involves the elimination of Berlin Circle and redistribution of vehicles through a new network of signalized intersections.

T8 Haddonfield-Berlin Road (CR 561)

US 30, Berlin Circle, Haddonfield-Berlin Road, Milford Road

DB# D95081

This project, located in Berlin Township and Berlin Borough, will address drainage improvements on US 30, Berlin Circle, Haddonfield-Berlin Road and Milford Road to alleviate flooding of adjacent properties.

T9 NJ 73 Drainage

Vicinity of Edgewood Avenue
DB# 96000
This project is located in Berlin Township and will address an identified drainage problem that results in flooding on the northbound side of Route 73. Conditions noted include an outfall pipe, which is partially buried, as well as the grass berm adjacent to the outside shoulder which restricts water from flowing downstream into the existing ditch.

T10 NJ 73 Median Closures
Copper Folly Road to Fellowship Road
DB# 94035
This project will provide for closure of selected median openings or construction of turn slots along NJ 73 in Berlin Township, Voorhees Township, Evesham Township and Mount Laurel Township. Minor signal and intersection improvements will also be included.

T11 Southern New Jersey Light Rail Transit System
Camden to Trenton
DB# T107
This project provides funding for property acquisition and project administration for the 34-mile initial operating segment located in various municipalities between Camden and Trenton.

S1 NJ 38 Corridor Study
Route 130 (Airport Circle to Route 206)
DB#191
This study will address possible operational improvements within this corridor. It will include the municipalities of Cherry Hill, Maple Shade, Moorestown, Mount Laurel Hainesport, Mount Holly, Lumberton and Easthampton Townships..

S2 NJ 70 Needs Analysis
NJ 73 to US 206
DB# 9049
A needs analysis will be undertaken for the development of a project to address traffic congestion and safety concerns along NJ 70 in Evesham, Medford and Southampton Townships.

S3 NJ 73 Intersection Improvements

I-295 to Commerce Parkway

DB# 9163

This project is located in Mount Laurel Township and includes intersection improvements at the Fellowship Road, Church Road, and Atrium Way intersections with NJ 73. The project calls for the elimination of the ramp on the southwest corner of Fellowship Road and the construction of a ramp on the northwest corner. NJ 73 and Church Road will be slightly realigned at the intersection and a two-way ramp will be located on the northwest corner, and two ramps will be located on the southeast corner. A forward jughandle will be located on the northbound side of NJ 73 at Atrium Way.

S4 NJ 73

Main Street Bridge

DB# 96005

An identified drainage problem results in periodic flooding on NJ 73 under the Main Street Bridge in Maple Shade Township. Conditions noted include backwater problems when heavy rainfall coincides with high tide. The drainage system discharging south on Main Street experiences the same backwater and flooding problems.

S5 NJ 70 Needs Analysis

NJ 38 to NJ 73

DB# 252A

A needs analysis will be undertaken for the development of a project to remediate identified safety and operational improvements along NJ 73 in Cherry Hill and Evesham Townships. A previously planned widening in this segment has been found to be unnecessary following implementation of other improvements to relieve congestion at key bottleneck points.

S6 US 30 Drainage

Vicinity of abandoned NJ Transit (PRSL) overpass

DB# 96004

Proposed drainage improvements at this location will alleviate periodic flooding during heavy rainfall. This project is located in Winslow Township.

S7 NJ 73: Jackson Road Drainage

Vicinity of Jackson Road

DB# 96007
Proposed drainage improvements on Route 73 under the NJ TRANSIT railroad bridge will alleviate periodic flooding during heavy rainfall. This project is located in Berlin Township.

P1 US 130 Park and Ride Lot Program
Vicinity of NJ 73
ID# B004
Construct a park and ride lot around the interchange in Cinnaminson or Pennsauken.

P2 CR 607 Corridor
NJ 38 to NJ 70
ID# B013
Provide shoulders and center left turn lane in Moorestown, Mount Laurel and Evesham.

P3 NJ 73 and I-295
Interchange
ID# B018
Replace the southbound I-295 off-ramp to NJ 73 northbound in Mount Laurel.

P4 NJ 73 Intersection Improvements
At Ardsley Road
ID# B021
Improve intersection operations in Evesham Township including possibility of a reverse jughandle on northeast corner.

P5 I-295 Park and Ride Lot Program
Vicinity of NJ 70
ID# C001
Construct a park and ride lot around the interchange in Cherry Hill.

P6 Atco Train Station
Waterford Township

ID# C014
Parking expansion and access improvements for station along NJ Transit Atlantic City Rail Line

P7 Old White Horse Pike (CR 716) and Burnt Mill Road Improvements
Waterford Township
ID# C020
Construct an extension of Burnt Mill Road from CR 716 to US 30 and construct a new bridge over NJ Transit Atlantic City Rail Line

P8 NJ 73 Improvements
River Road (CR 543) to Fork Landing Road in Pennsauken
ID# C028
Relieve congestion

P9 NJ 73 Lighting
CR 561 to CR 723
ID# C033
Inadequate lighting

P10 Jackson Road (CR 534) Resurfacing
Waterford Township to Camden County Line
ID# C042
Resurface roadway

L1 Berlin Cross Keys Road (CR 689) Widening
US 30 to NJ 47
LRP# 12
Widen roadway, install new traffic signals and construct Cross Keys Bypass

C1 NJ 73 Widening
Church Road (CR 616) to Kresson Road (CR 671)/ Braddock Mill Road
ICN# 1

Widen to a six lane cross section in Mount Laurel Township and Evesham Township.

C2 NJ 73 Widening

Cooper Road (CR 675) to Berlin Circle
LTCN# 1
Widen to a six lane cross section in Voorhees Township and Berlin Township.

T# DVRPC FY 2001-2004 Transportation Improvement Program
S# NJ DOT FY 2001-2002 Study and Development Program
P# DVRPC Non-Pipeline Transportation Problems - July 2000
L# DVRPC's Year 2020 Long Range Plan
C# NJ DOT Corridor Needs Assessment 1994

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 *NJ CMS 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 *NJ CMS Report*. The *NJ CMS 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 improvement s 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 *NJ CMS 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 *NJ CMS 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 CMS 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 CMS 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 CMS Report

In the *New Jersey Congestion Management System Report,* the Pennsauken to Winslow corridor runs the length of Route 73 from the Tacony-Palmyra Bridge to the Atlantic City Expressway. The corridor was broken down into four subcorridors to better reflect the surrounding land use and travel patterns. The Pennsauken subcorridor is characterized by the older, densely developed residential areas of Palmyra borough and the industrial areas of Pennsauken. The Mount Laurel/Marlton subcorridor is characterized by significant residential developments with strip commercial activity located along NJ 73 and office and industrial parks located adjacent to or just off the highway. The Berlin subcorridor consists of Berlin Borough which is characterized by older, dense development and Berlin Township which is experiencing an influx of new development. Several large shopping areas have been recently built along Route 73 in this

vicinity. Finally, Winslow is a quickly developing residential area. Despite this new development, the area is predominantly undeveloped with a large portion of land in agricultural and wooded uses.. 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 findings of the *New Jersey CMS Report* for each subcorridor are summarized below.

Pennsauken Subcorridor - The Pennsauken subcorridor is a densely developed subcorridor but is not experiencing as much growth as the Mt. Laurel/Marlton subcorridor. Traffic from both the Betsy Ross Bridge and Tacony-Palmyra Bridge enter New Jersey within this subcorridor. NJ 90, carrying traffic to and from the Betsy Ross Bridge terminates at NJ 73, just east of US 130. NJ 73 was found to be congested through the subcorridor. CR 607, which feeds into the Tacony-Palmyra Bridge plaza is also congested as is US 130 through most of the subcorridor. Congestion in the subcorrridor is primarily caused by heavy truck traffic bound to or from the bridges and industrial parks in the subcorridor, coupled with lane reductions on several facilities and inadequate and/or circuitous interchanges at several locations. Intersection deficiencies and traffic signal timing problems also contribute to congestion. CR 607 and Temple Boulevard in Palmyra are congested as a result of intense roadside development and turning movements mixed with the heavy through volumes headed to or from the Tacony-Palmyra Bridge. CR 543 in Pennsauken is congested due to heavy truck volume bound for the industrial parks.

There is substantial bus service in the area along US 130, CR 607 and CR 543 with service

to the Pennsauken industrial area. The South Jersey light rail line will also serve this area and should provide an attractive transit alternatives to help alleviate some congestion. Because of the employment base in the industrial parks and along US 130 mode shift, and Transportation Demand Management strategies are highly recommended as are improvements to the transit service. Pedestrian improvements and parking management strategies are recommended to reduce congestion in Palmyra borough. Traffic operations and incident management strategies are pertinent for selected facilities, such as NJ 73 ans US 130. Finally, automated toll collection and HOV toll savings were recommended for the river crossings. The EZ Pass automatic toll collection system has been implemented on the Betsy Ross Bridge but not the Tacony-Palmyra Bridge.

Mt. Laurel/Marlton Subcorridor - Mt. Laurel/Marlton is the most developed and the most congested subcorridor in the corridor. Most of NJ 73 is congested within the subcorridor. Congestion along NJ 73 is primarily attributed to the adjacent commercial development, intersection deficiencies, the Marlton Circle, traffic signal timing and insufficient capacity for a high growth area. Heavy through volumes, particularly shore-bound traffic in the summer, also contributes to congestion. The roads feeding into the Marlton Circle were also identified as congested.. Perpendicular highway facilities, which feed into NJ 73 were congested, most notably NJ 38 and CR 537. There is no uninterrupted transit service on NJ 73 within the subcorridor but several bus routes do traverse or travel for a short distance on NJ 73. Bus service is concentrated around the Moorestown Mall and the Maple Shade area. The recommended improvement strategies within the subcorridor focus on mode shift, transit enhancements and Transportation Demand Management. Traffic operations improvements and selected roadway widening were also recommended. The *NJ CMS Report* also focused on land use policies and access management (i.e. driveway controls) as a means to combat congestion.

Berlin Subcorridor - Berlin borough is densely developed with a "Main Street" type commercial district but the area adjacent to Route 73 has several large recently constructed "suburban-style" shopping centers. The southern part of the subcorridor is similar to the development patterns in the Winslow subcorridor. The *NJ CMS Report* found congestion in the Berlin subcorridor to be centered around the Berlin borough business district and the Berlin Circle. Roads radiating from the borough were also found to be congested, particularly NJ 73 and CR 689. The New Jersey Transit Atlantic City rail line passes through the subcorridor with a station at Atco, adjacent to the US 30/NJ 73 interchange and bus route 406 provides limited service through the subcorridor on NJ 73.

This subcorridor was found to provide a good opportunity to initiate some effective congestion mitigation strategies, particularly transit-oriented measures. Overall, the recommended strategies heighten the dichotomy of the congestion located in the borough and in the rest of the subcorridor. Intersection improvements , traffic signal timing improvements and parking management strategies reflect the built-up nature of the borough. While recommendations for the outer areas address needs for additional capacity, particularly for the area adjacent to the Berlin Circle. Access management strategies were suggested for the commercial areas along NJ 73 and CR 689. This recommendation is in response to the large number of driveways along these roads. Better coordination of transit service was highlighted because there is currently no coordination between bus routes and the Atlantic City rail line.

Winslow Subcorridor - Winslow is the least developed subcorridor within the NJ 73 corridor. However, it is experiencing rapid growth particularly in residential units (averaging over 225 new units per year over the past decade). The development tends to be typical suburban development with single-family homes placed on larger lots. The *NJ CMS Report* found no congestion currently within the subcorridor. The lack of density makes it difficult to provide transit service and increases the reliance on the private automobile. The *New Jersey CMS Report* identified growth management and access management strategies as the most appropriate for the subcorridor. The report also suggested ITS strategies, particularly automatic toll collection, should be implemented along the Atlantic City Expressway, which cross the subcorridor. Since the time the *NJ CMS Report* was published EZ Pass has been implemented.

NJ 73 Corridor Congestion Management System Analysis

The NJ 73 Corridor study provides a great opportunity to update the *NJ CMS Report* and look at CMS issues within the corridor in greater detail. Congested locations identified in the *NJ CMS 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 the most qualified to identify and prioritize the congested areas. The municipal representatives pointed out chronically congested locations, including some additional areas that were not identified in the *NJ CMS Report*.

Information gathered in the field views was compared to the findings of the *NJ CMS Report* and strategies were chosen to address congestion at problem locations discussed earlier in this report. A subcorridor overview was then developed from the problem locations, the *NJ CMS Report* and field observations to address congestion within the entire subcorridor. Subcorridor

boundaries shown on Figures 52a and 52b reflect the approximate boundaries of the subcorridors. In many cases, land use and transportation characteristics flow from one subcorridor into another and there is no clear demarcation.

Particular emphasis was placed on the Mt. Laurel/Marlton subcorridor because it has and will continue to receive the greatest amount of development pressure. Additionally, NJ DOT has already studied several locations within the subcorridor. An overview of each subcorridor follows:

Pennsauken Subcorridor

PRIMARY ISSUES: Heavy Truck Traffic; Mobility; Inadequate Interchanges and Intersections

RECOMMENDED CMS STRATEGIES: Intersection Improvements; Interchange Connectivity Improvements; Conversion of One-Way Streets; Transit Service Enhancements (once the South Jersey Light Rail Transit Line is operating)

The Pennsauken subcorridor encompasses Palmyra borough, which is an older, densely developed borough and portions of Pennsauken Township which includes several large industrial parks along US 130 and River Road. Congested locations identified in the *NJ CMS Report* were verified with the exception of CR 607 in Palmyra which did not appear to be congested. The causes identified in the *NJ CMS Report* were also supported by the field views conducted in the subcorridor. Heavy truck traffic, particularly on NJ 73, River Road, and to a lesser extent US 130, contribute to congestion on those facilities. There are several deficient intersections and interchanges, particularly along NJ 73 within Palmyra borough and US 130 in Cinnaminson. However, mobility (access) and connectivity are the prevalent issues in this subcorridor.

Intersection deficiencies in Palmyra are primarily caused by misaligned or off-set intersections, insufficient or obstructed sightlines and one-way streets. Access and mobility are also problems identified in the field views. There is no direct access from the western portion of Palmyra borough onto southbound NJ 73. Access to Broad Street (the main north-south street that is Palmyra's main business district) from northbound NJ 73 is difficult due to the lack of deceleration lanes and proximity of a Conrail bridge which creates a sight-distance problem. The NJ 73 and US 130 interchange and the NJ 73 and River Road interchange do not allow all movements between the facilities to be made. The southeast quadrant of the NJ 73/US 130 interchange is not fully accessible, specifically in relation to NJ 90. The NJ 73/River Road interchange does not have an off-ramp from northbound NJ 73 to River Road, as mentioned above which exacerbates the problem at NJ 73 and Broad Street. Mobility between NJ 73 and Lenola

Road is another issue. There is a lack of connectors between these two parallel facilities. The major connector between the two within the subcorridor is Fork Landing Road which suffers from substandard geometrics and seasonal flooding. Additionally, the Fork Landing Bridge is narrow and weight restricted.

The problems identified on US 130 in the subcorridor (specifically at Cinnaminson Avenue) are currently being addressed by NJ DOT's consultant based on the recommendations of the US 130 Corridor Study. Congestion in the vicinity of the industrial parks in Pennsauken is caused primarily by the difficulty of trucks negotiating River Road. Several turns have tight turning radius which trucks must slow to maneuver. Lack of directional signing is a related problem. Intersection improvements and improved signing within this area should help alleviate congestion in and around the industrial parks.

The South Jersey Light Rail Transit Line will travel through this subcorridor and stations will be located at River Road just south of NJ 73 in Pennsauken and in Palmyra just north of Cinnaminson Avenue. The River Road station will have an 800-space park and ride lot. Therefore, mobility between US 130 and NJ 73 is even more imperative. The transit line provides a great alternative to driving to points between Trenton and Camden and accessibility to the stations should be unimpeded.

Mt. Laurel/Marlton Subcorridor

PRIMARY ISSUES: High Demand and Insufficient Capacity, particularly at Signalized Intersections; Deficient Intersections and Jughandles (i.e., Narrow, Obtuse Angles and Misaligned); Numerous Lane Drops; and Weaving/Merging Problems

RECOMMENDED CMS STRATEGIES: see Table 4

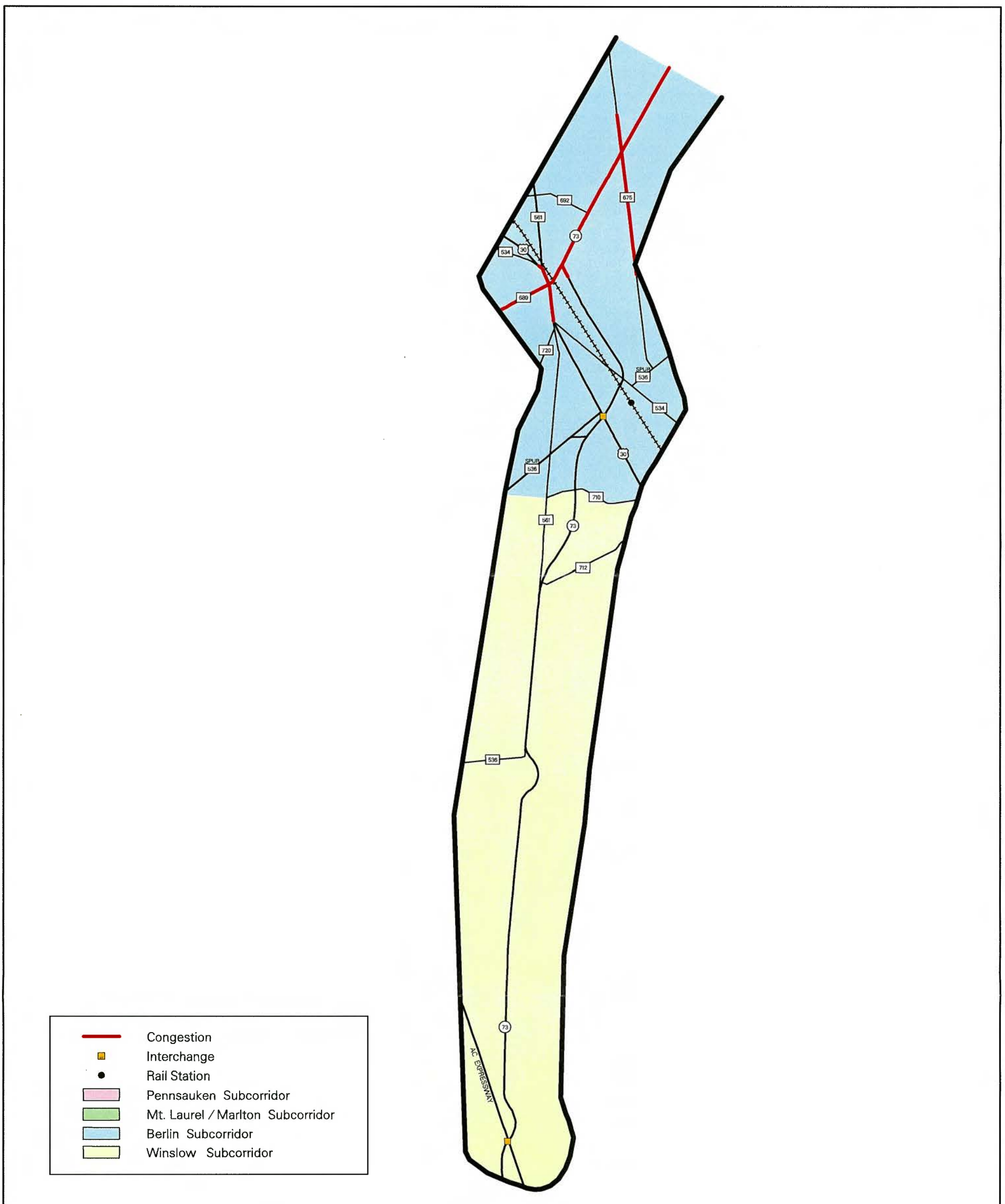
This subcorridor has experienced an explosive amount of development over the past several decades. There are numerous office, commercial and retail establishments within the subcorridor. The subcorridor is home to the Moorestown Mall, East Gate Shopping Center and numerous other shopping centers as well as many business parks including East Gate and Green Tree Corporate Centers. A large number of major highway facilities, including the New Jersey Turnpike, I-295, NJ 38, NJ 70 and of course, NJ 73 converge in the subcorridor. Within the subcorridor NJ 73 is generally a 2-3 lane-by-direction facility with numerous lane drops and additions. NJ 73 has interchanges with the NJ Turnpike and I-295 within close proximity. NJ 73 is congested throughout

Figure 52A
NJ 73 Corridor Study
Pennsauken to Winslow CMS Corridor

0 1 2 3
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2000

Figure 52B
NJ 73 Corridor Study
Pennsauken to Winslow CMS Corridor



0 1 2 3
MILES

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION
JULY 2000

this subcorridor due primarily to the large amount of roadside development and high traffic volumes. All the major cross roads in the subcorridor (NJ 38, NJ 70, CR 537, CR 673, CR 616 and CR600/CR620) were found to be congested based on field views, discussions with local officials and the *NJ CMS Report*.

NJ DOT has identified several projects to address the congestion in the subcorridor. The Marlton Circle will be eliminated. A partial elimination, that cut through the circle for traffic on NJ 73 but maintained the circle for motorists on NJ 70, was constructed several years ago but congestion has persisted. Therefore, a complete elimination of the circle is planned. NJ DOT also plans to address the area of NJ 73 around CR 537 (Main Street) and Fox Meadow. There are currently numerous streets with access to NJ 73 in this vicinity creating many intersections within a short segment. NJ DOT plans to make several operational improvements to this section of NJ 73. Preliminary plans call for adding a northbound and a southbound lane between the CR 537 ramps and NJ 41 interchange (approximately ⅝ mile) to help alleviate the access and merging problems in this area . The interchanges will be updated to current design standards and additional access will be provided between CR 537 and the Fox Meadow apartment complex. Fellowship Road will be realigned to a signalized intersection with Fox Meadow/Helene Street and Cedar Avenue and County Avenue intersections with NJ 73 will be closed.

NJ 73 is severely congested throughout the subcorridor during the peak period and frequently throughout the day. Causes vary at each problem location identified but the most prevalent cause is deficient intersections. Individual problems at intersections include weaving maneuvers and circuitous turning movements, lack of capacity in jughandles, and inability to handle large number of turning movements. These problems are caused and exacerbated by the high volume of traffic generated by the large amount of development along this portion of Route 73 coupled with the proximity of the New Jersey Turnpike, I-295 and other principal arterials in this vicinity.

Improving intersections along NJ 73 is a relatively straightforward means of addressing the congestion in the corridor. Widening intersections or restriping to allow for additional approach lanes, realigning and/or restriping jug handles, and providing better signing are all recommended improvements. Signal improvements, such as protected left-turn signal phases, will also help in this area and are recommended.

The segment of NJ 73 between I-295 and Atrium Way is especially congested throughout

the day. This report recommends utilizing some Intelligent Transportation System (ITS) strategies in this locale. This would be particularly beneficial in reducing congestion, especially incidents which account for a large portion of congestion. Recommended components include vehicle detectors, closed circuit television cameras to monitor traffic and closed loop signal systems. These ITS measures can be complemented by roving emergency service patrols to aid motorists and accident investigation sites to move vehicles that are involved in minor accidents to in order to exchange information.

The large employment base in this area presents an opportunity to implement mode shift strategies such as car or vanpools. Alternative work hour strategies such as flexible work schedules are also applicable in this environment. There appears to be enough employment density to warrant additional transit service. However, the residential origins may be disparate enough to not make additional routes feasible. In fact, NJ Transit ran a bus line on 73 in 1995, from Frankford (Philadelphia) to Marlton (the 414 line). The line was discontinued after one year due to low ridership. Demand responsive transit service, such as a shuttle bus to a rail line or a lunch-time shuttle loop is much more applicable to this area. The Cross County Connection Transportation Management Association, which is located in the subcorridor, can promote many of these strategies to employers in the subcorridor.

Limited capacity enhancements are also recommended for this subcorridor. The additional capacity will help to alleviate congestion at signalized cross streets by reducing the queues at narrow intersections and increase access to certain areas. The majority of capacity increases will occur at isolated intersections throughout the corridor and consist mostly of additional approach lanes at intersections. Many of the approach lanes can be accomplished by restriping the intersection without physical widening. These projects are not required to be part of the regional Congestion Management System because they pertain to turn lanes and are considered non-regionally significant.

Proposed improvements along NJ 73 from Main Street to Fox Meadow are considered regionally significant and are currently considered to be part of the regional CMS because capacity enhancement was determined to be a *very practical* strategy in the *New Jersey CMS Report*. Additional analysis based on level of service (LOS) analysis and field views has determined that limited additional capacity in this vicinity is warranted. A level-of-service analysis for the proposed improvements to NJ 73 in the vicinity of Main Street and Fox Meadow was conducted. The intersections along this stretch of NJ 73 currently are failing and will continue to function at

LOS F in the future (2020 was used for the future scenario). By implementing the proposed improvements the level-of-service improves to level C. The other CMS strategies recommended for this corridor will not be able to relieve the congestion by themselves. Based on national studies, it is estimated that they will have a less than 10% impact on reducing congestion within the subcorridor. Therefore, the proposed improvements result from the regional CMS and are warranted.

Similarly, an analysis should be conducted for the proposed Atrium Drive extension intersecting a Church Road/Commerce Parkway extension to determine the feasibility of such an alignment. If this improvement alleviates the severe congestion at NJ 73 and Church Road and Ramblewood Parkway intersection then it appears to be a warranted capacity increase. New Jersey DOT also has a proposed project in the Study and Development program that would add a lane on southbound NJ 73 in the vicinity of Fellowship Road to Church Road. The same criteria would also apply to this proposed improvement. Capacity enhancements while not a first resort appear to be needed at certain locations within this subcorridor. The other strategies listed in Table 3 also need to be implemented in order to insure the full benefit of any capcity enhancements undertaken.

TABLE 4
CMS Strategies for the Mt. Laurel/Marlton Subcorridor

Strategy	**Improvement/Recommendation**
TDM, Alternative Work Hours, Mode Shift	Continue funding for the Cross County Connection Transportation Management Association, to work with employers in the area to institute alternatives to SOV commuting, such as ridematching, car and van pooling, guaranteed ride home program, and promotion of transit.
Demand Responsive Transit Service	Investigate the possibility to develop transit linkages to the South Jersey Light Rail Transit Line, currently under construction, and/or a mid-day transit service between office parks and retail establishments.
Intelligent Transportation Sytems (ITS)	Monitor real time traffic conditions and disseminate information via variable message signs, highway advisory radio, SmarTraveler web site and the general media. Specific elements include vehicle detection systems, closed circuit television cameras and closed loop signal systems.
Incident Management	Develop alternative routes, institute roving emergency service patrols and accident investigation sites.

TABLE 4 **CMS Strategies for the Mt. Laurel/Marlton Subcorridor**	
Strategy	**Improvement/Recommendation**
Traffic Operations Improvements	Intersection and roadway widening, realignment, channelization and/or restriping at the following locations: NJ 73 at I-295 to Collins Avenue NJ 73 at Fellowship Road NJ 73 at Church Road/Ramblewood Parkway NJ 73 at Lincoln Drive NJ 73 at Brick Road NJ 73 at Evesham Road/Marlton Parkway to Brick Road NJ 70 at Springdale Road to Wexford Drive NJ 70 at I-295 to Frontage/Covered Bridge Road Lenola Road at Camden Avenue and New Albany Street
Coordinate and Upgrade Traffic Signals	Specific locations: NJ 73 and Willow Road Willow Road and Collins Avenue Greentree Road at Lincoln Dr. East, NJ 73 and Lincoln Dr. West NJ 70 at Frontage Road/Covered Bridge Road
Capacity Enhancements	NJ 73 at CR 537 to Fox Meadow

Berlin Subcorridor

PRIMARY ISSUES: Dense Roadside Development and Insufficient Intersection Geometrics

RECOMMENDED STRATEGIES: Improved Transit Coordination; Median Closures; Intersection Improvements with Better Signing; Development of a Transportation Plan for the Future Development Within the Subcorridor, particularly Berlin borough.

This subcorridor is distinguished by the dichotomy between Berlin Borough and the rest of the subcorridor. Berlin is an older, densely developed borough which US 30 and NJ 73 travel through. The remainder of the subcorridor is characterized by less dense suburban development. The southern portion of the subcorridor is similar to the adjacent Winslow subcorridor. The northern portion of the subcorridor is beginning to feel development pressure spreading south from the Mt. Laurel and Marlton area.

Field views verified the congested locations identified in the *New Jersey Congestion Management System Report*. Congestion was found to be focused along US 30 and intersecting roads in Berlin Borough and along NJ 73 in the borough in the vicinity of the commercial and retail developments near Franklin Avenue as well as in the vicinity of the Berlin Circle. Congestion within Berlin Borough appears to be primarily caused by lane drops and queues due to lack of turning lanes at intersections, poor signage and constricted intersections. In the other areas of the subcorridor, misaligned intersections, lack of sufficient queuing space and numerous median openings are the major causes. Peak period congestion on NJ 73 makes turning movements from Commonwealth Drive and Dutch Road difficult.

Many of the identified problems can be solved by restriping roads to eliminate lane drops (i.e., US 30 between Taunton Road and Washington Avenue) and intersections for dedicated turning lanes (i.e., US 30 at Milford Road/Berlin Cross-Keys Road and US 30 at East Taunton Avenue); realigning intersections (.e., NJ 73 at Kresstown Road/Gibbsboro Road), particularly multi-legged intersections; and providing improved signing. Median closures will also help address the congestion in the outlying areas of the subcorridor, particularly at Commonwealth Drive and Dutch Road. There also exists the opportunity to relieve congestion on NJ 73 in the vicinity of Franklin Avenue and D'Angelo Drive by rerouting traffic to alternative routes by improved signing in the area. An additional traffic signal is another possibility dependent upon a warrant analysis. NJ DOT plans to eliminate the Berlin Circle which should improve traffic circulation and reduce congestion on NJ 73 in that vicinity.

There does exist the opportunity to increase transit usage within the subcorridor. New Jersey Transit's Atlantic City Rail Line stops at Atco adjacent to the US 30 and NJ 73 interchange. Access to the station is circuitous for some movements and there are no direct bus connections. Improving the vehicular and transit connections at Atco is highly recommended.

There are also several large vacant parcels which have the potential to be significant traffic generators along US 30 in Berlin Borough in the vicinity of West Jersey Hospital. It is recommended that the borough review its zoning and access codes, particularly addressing any need for additional access roads and/or intersections, to insure that any development on these parcels does not negatively impact on traffic flow within the borough. By developing a plan now, the borough can have a set of priorities that can be addressed when the parcels are developed.

Winslow Subcorridor

PRIMARY ISSUES: Impending Development and Safety

RECOMMENDED CMS STRATEGIES: Growth Management; Access Management; Intersection Improvements and Channelization

Because this subcorridor is mostly undeveloped, there is currently not much congestion. However, as development continues, congestion will begin to occur. NJ 73 and US 30 parallel each other through the subcorridor. Both are primarily two-lane by direction facilities, however, US 30 has much more roadside development in this vicinity compared to NJ 73. The *NJ CMS Report* did not find any congestion in this subcorridor and field views did not detect any particularly congested areas. Currently, safety issues predominate in this area. It was noted on the field views with municipal representatives that several vehicles have run off the road in the Chesilhurst section of US 30 and lack of lighting was mentioned as a problem along NJ 73 in the vicinity of CR 536. Congestion problems are typified by lack of protected turn signal phasing and intersection capacity issues.

Because of the increasing amount of development in this subcorridor, growth management and access management are particularly important strategies. Land use policies that seek to increase density and limit sprawl will help insure less congestion. Similarly, by developing comprehensive municipal circulation plans, the transportation infrastructure can be used more efficiently. Instead of letting development occur sporadically and dealing with the congestion consequences later, development of a circulation plan will allow development to fit into the transportation system rather then vice-versa. Town center development, such as planned by a developer along NJ 73 in the vicinity of CR 710, if done properly, can foster less reliance on automobile trips.

Access management is also an important component of a good circulation plan. By stipulating where access to major arterials like NJ 73 and US 30 should occur and limiting the proximity of access points not only reduces congestion but also improves safety. If access to several adjacent properties is limited to a major intersection and directed to particular parcels by internal circulator roads, property values can still be maintained while increasing the efficiency of the roads.

Many intersections along NJ 73 and US 30 in this subcorridor will not be able to handle the additional traffic that will be generated by the expected development. Therefore, intersection improvements confined to turn lanes, channelization and signal timing improvements (i.e., NJ 73

at Pump Branch Road and US 30 at Garfield Road) will be necessary. Provision of bus pull-offs and/or shelters, particularly along US 30 in Chesilhurst, will improve safety along this stretch of US 30 and provide an amenity for transit users.

This subcorridor provides the opportunity to institute good planning practices with the hope that expensive infrastructure improvements can be minimized in the future. However, the municipalities within this subcorridor need to institute the necessary zoning code and land use regulations in order for these strategies to be effective. The municipalities must also work closely with developers to develop effective circulation plans.

PLAN IMPLEMENTATION

The *NJ 73 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 5 (page 157) *NJ 73 Corridor Transportation Improvements Implementation Matrix*. This easy to use matrix suggests the relative importance to stakeholders of the various attributes of each problem location. Each improvement scenario, identified is evaluated in terms of 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.

The end of the matrix lists those projects in the corridor which are farther advanced through the planning process. These improvements are programmed for implementation on DVRPC's FY 2001-2004 Transportation Improvement Program (TIP), NJ DOT FY 2001-2002 Study and Development Program, identified in DVRPC's Non-Pipeline Transportation Problems - July 2000, listed in DVRPC's Year 2020 Long Range Plan or listed in NJ DOT's Corridor Needs Assessment (1994). By listing those projects which are already part of the LRP and TIP, this improvement plan becomes as comprehensive as possible in identifying the transportation needs of the corridor.

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. There are currently no "designated centers" located within the corridor. However, several municipalities have been identified in the State Plan by counties and municipalities as Town Centers through the cross-acceptance process. They are: Moorestown, Maple Shade and Berlin Townships and Berlin Borough. The US 130 Corridor recently received designation by the State Planning Commission as a designated corridor.

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 5.

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 NJ 73 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 NJ 73. In addition, many of the cross streets are designed, built and maintained by local and county government, and these also impact how well NJ 73 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 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 NJ 73 these include: I-295, NJ 38, NJ 70, US 130, NJ 90, NJ 41 and US 30. Improvements to these highways are typically financed by state and/or federal funds. Occasionally, developer contributions are also a source of funding if the project has special impact by a development. The State ultimately makes the decision on what improvements are done to their facilities but often coordinates with the county or local municipalities when the improvements include facilities under their jurisdiction.

Burlington and Camden Counties

The counties have 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 543, CR 537, CR 561, CR 534, CR 544, CR 536 and CR 536 Spur. Most of the county roads in the corridor serve as access roads into or across NJ 73. The primary function of the county network is to serve medium range trips or to serve as feeders to the state system. Improvements to county roads are financed by county dollars or where eligible can they can receive federal or state funding. The county has the ultimate decision concerning improvements on county roads but typically coordinates with the municipality in which the improvement is located.

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 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
1	NJ 73 at Souder St (Palmyra Boro)	C	M	L	Mobl, Safe	MCD	DOT, BCBC
2	NJ 73 Northbound at Broad St (Palmyra Bor)						
	short term improvements		H	L	Safe, Mobl	Co	MCD, DOT
	long term improvements	C	M	H	Safe,Mobl	DOT	Co, NJT, BCBC
3	River Road: NJ 73 to Sherman Ave (Pennsauken Twp)		H	L	Mobl, Safe	Co	MCD, NJT
4	US 130: Cinnaminson Ave to Riverton Rd (Cinnaminson Twp)	C	H	H**	Cong, Safe, Mobl	DOT	Co, MCD
5	Pennsauken Commercial/Industrial Area Access (Pennsauken Twp)		L	H	Mobl, ED	DOT	Twp, Co
6	Fork Landing Rd (Cinnaminson Twp)	C	H	H**	Mobl, Safe	MCD	Co, DOT
7	Lenola Rd: Camden Ave/New Albany Rd (Moorestown Twp)	C*	M	M**	Cong, Safe, Mobl	Co	MCD
8	NJ 73: Main St to Fox Meadow (Maple Shade Twp)	C*	H	H	Cong, Safe, Mobl	DOT	Co, MCD
9	NJ 73: I-295 to Collins Ave (Maple Shade Twp, Mount Laurel Twp)	C*	H	L	Cong, Safe, Mobl	DOT	Co, MCD

TABLE 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
10	NJ 73: I-295 to Atrium Way (Mount Laurel Twp)		H	H**	Cong, Safe, Mobl	DOT	Co, MCD
11	NJ 73 at Lincoln Dr (Evesham Twp)		H	L	Cong, Safe, Mobl	DOT	Co
12	NJ 73 at Greentree Rd (Evesham Twp)		H	L	Safe	DOT	Co
13	NJ 70: Springdale Rd to Wexford Dr (Cherry Hill Twp)		M	M**	Safe, Mobl	DOT	Co, MCD
14	NJ 70: I-295 to Covered Bridge Rd/Frontage Rd. (Cherry Hill Twp)		H	M	Cong, ED	DOT	MCD, Dev
15	NJ 73 at Brick Rd (Evesham Twp)		M	M	Cong	DOT	MCD
16	NJ 73: Evesham Rd./Marlton Parkway to Brick Rd (Evesham Twp)		H	L	Safe	DOT	
17	NJ 73 at Signal Hill Dr, Dutch Rd, Commonwealth Dr (Evesham Twp, Voorhees Twp)		L	L	Safe	DOT	MCD
18	NJ 73 at Kresson Rd/Braddock Mill Rd (Evesham Twp, Voorhees Twp)		M	L	Cong, Safe	DOT	Co, MCD

TABLE 5
NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
19	NJ 73: Franklin Ave to D'Angelo Dr (Berlin Twp)	C*	H	M	Cong, Mobl	DOT	MCD
20	US 30 at Milford Rd (Berlin Boro)	C*	H	L	Cong,	DOT	MCD
21	US 30: East Taunton Rd to Tansboro Rd (Berlin Boro)	C*	M	L	Cong, Safe	DOT	Co, MCD, Dev
22	Berlin Undeveloped Parcels on US 30 (Berlin Boro)	C*	L	L**	Mobl, ED	MCD	Dev
23	Taunton Rd: NJ 73 Off-Ramp to Tansboro Rd (Winslow Twp)		H	L	Safe, Mobl	DOT	Co, Dev
24	NJ 73 at Hayes Mill Rd/Factory Rd (Winslow Twp)		L	M**	ED, Mobl	MCD	Co, DOT
25	NJ 73: Pump Branch Rd to New Brooklyn Cedarbrook Rd (Winslow Twp)		M	L	Safe	DOT	Co
26	US 30: Garfield Ave to Center Ave (Chesilhurst Boro)	D	L	L**	Safe	DOT	MCD, NJT
T1	NJ 73 and NJ 70 Marlton Circle DB# 567 (Evesham Twp)		H	H	Cong, Safe, Mobl	DOT	Co, MCD

TABLE 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
T2	NJ 73: Fox Meadow/Fellowship Rd DB# 94068 (Maple Shade Twp)	C*	H	H	Cong, Safe, Mobl	DOT	Co, MCD
T3	Burlington County Computerized Signal Control Phase IV DB # D9911 (Various MCDs in Burlington County)		H	M	Cong, Mobl	Co	DOT, MCD
T4	US 130: Airport Circle to CR 541 DB # 95078B (Various MCDs in Burlington and Camden Counties)	C	H	H**	Mobl, ED	DOT	Co, MCD
T5	Traffic Signal Contract 16: US 30, NJ 38, NJ 70 and NJ 73, DB# 713 (Various MCDs in Burlington and Camden Counties)	C*	H	H	Cong, Mobl	DOT	Co, MCD
T6	US 30 Bridges DB# 157 (Winslow Twp)		H	H	Safe, Mobl	DOT	Co, NJT
T7	NJ 73 Berlin Circle DB# 93109 (Berlin Boro)	C*	H	H	Safe, Mobl	DOT	Co, MCD

TABLE 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
T8	Haddonfield-Berlin Rd., Milford Rd., US 30, Berlin Circle Drainage Improvements DB# D95081 (Berlin Boro, Berlin Twp)	C*	H	M	Safe, Mobl	DOT	Co, MCD
T9	NJ 73 Drainage at Edgewood Ave DB# 96000 (Berlin Twp)	C*	H	L	Safe, Mobl	DOT	Co, MCD
T10	NJ 73 Median Closures DB# 94035 (Berlin Twp, Voorhees Twp, Evesham Twp, Mount Laurel Twp)	C*	H	L	Safe, Mobl	DOT	Co, MCD
T11	Southern New Jersey Light Rail Transit DB# T107 (Various MCDs in Burlington and Camden Counties)	C*	H	H	Mobl, ED, Cong, Safe	NJT	Co, MCD, DOT
S1	NJ 38 Corridor Study: US 130 to US 206 DB# 191 (Various MCDs in Burlington and Camden Counties)	C*	H	H**	Mobl, ED	DOT	Co, MCD
S2	NJ 70 Needs Analysis: NJ 73 to US 206 DB# 9049 (Evesham Twp, Medford Twp, Southampton Twp)		H	H**	Mobl, Safe, Cong, ED	DOT	Co, MCD

TABLE 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
S3	NJ 73: I-295 to Commerce Parkway DB# 9163 (Mount Laurel Twp)		H	H	Cong, Safe, Mobl	DOT	Co, MCD
S4	NJ 73: Main St Bridge DB# 96005 (Maple Shade Twp)	C*	H	M	Safe, Mobl	DOT	Co, MCD
S5	NJ 70 needs Analysis: NJ 38 to NJ 73 DB# 252A (Pennsauken Twp., Cherry Hill Twp., Evesham Twp)		H	H**	Mobl, Safe, Cong. ED	DOT	Co, MCD
S6	US 30 Drainage DB# 96004 (Winslow Twp)		H	L	Safe, Mobl	DOT	NJT, MCD
S7	NJ 73 Drainage at Jackson Rd DB# 96007 (Berlin Twp)	C*	H	L	Safe, Mobl	DOT	Co
P1	US 130 Park and Ride Lot Vicinity of NJ 73 ID# B004 (Cinnaminson Twp, Pennsauken Twp)	C	L	L	Mobl	DOT	Co, MCD
P2	CR 607 Corridor: NJ 38 to NJ 70 ID# B013 (Mount Laurel Twp, Evesham Twp)		L	M	Safe, Mobl	Co	MCD

TABLE 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
P3	NJ 73 and I-295 Interchange ID# B018 (Maple Shade Twp)	C*	L	H	Mobl, Cong	DOT	MCD
P4	NJ 73 at Ardsley Dr ID# B021 (Evesham Twp)		L	L	Safe	DOT	MCD
P5	I-295 Park and Ride Lot Vicinity of NJ 70 ID# C001 (Cherry Hill Twp)		L	L	Mobl	DOT	Co, MCD
P6	Atco Train Station Improvements ID# C014 (Waterford Twp)		L	L	Mobl	NJT	Co, DOT, MCD
P7	Old White Horse Pike and Burnt Mill Rd Improvements ID# C020 (Waterford Twp)		L	M	Mobl, Safe	Co	MCD
P8	NJ 73 Improvements River Rd to Fork Landing Rd ID# C028 (Pennsauken Twp)		L	M	Cong	DOT	Co, MCD

TABLE 5

NJ 73 Transportation Improvements Implementation Matrix

Location		*Center/ Distressed*	*Priority*	*Cost Range*	*Benefits*	*Lead Role*	*Assisting Role*
P9	NJ 73 Lighting ID# C033 (Winslow Twp)		M	L	Safe	DOT	
P10	Jackson Road Resurfacing ID# C042 (Waterford Twp)		M	L	Mobl	Co	
L1	Berlin Cross Keys Road Widening LRP# 12 (Various MCDs in Camden and Gloucester Counties)	C*	L	H	Cong, Mobl, ED	Co	MCD
C1	NJ 73 Widening: Church Rd to Kresson Rd/ Braddock Mill Rd ICN# 1 (Voorhees Twp, Berlin Twp)	C*	L	H	Cong, Mobl, Safe	DOT	Co, MCD
C2	NJ 73 Widening: Cooper Rd to Berlin Circle LTCN# 1 (Mount Laurel Twp, Evesham Twp)		L	H	Cong, Mobl, Safe	DOT	Co, MCD

Key:

Location:	T1 = DVRPC FY 2001-2004 TIP, S1 = NJ DOT FY 2001-2002 Study and Development Program, P1 = DVRPC Non-Pipeline Transportation Problems - July 2000, L1 = DVRPC Year 2020 Long Range Plan, C1 = NJ DOT Corridor Needs Assessment 1994
Center/Distressed:	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. D = Ranked in Municipal Distress Index Top 100 distressed municipalities.
Priority:	H = High, M = Moderate, L = Low
Cost Range:	H = High, M = Moderate, L = Low
Benefits:	Cong = Congestion, ED = Economic Development, Mobl = Mobility, Safe = Safety,
Role:	MCD = municipality, Co = county, DOT = NJ Department of Transportation, NJT = NJ Transit, BCBC = Burlington County Bridge Commission, 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

List Of Municipal Meeting Participants

Berlin Borough
Mayor Millard Wilkinson

Berlin Township
Mayor David McPeak
Chuck Reibel, Jr.

Cherry Hill Township
Marge DellaVecchia

Chesilhurst Borough
Mayor Arland Poindexter

Cinnaminson Township
Mayor William Kollar

Evesham Township
Sgt. Bruce Lacarte

Maple Shade Township
George Haeuber

Moorestown Township
Bob Hall
William Wesolowski

Mount Laurel Township
George Morris
Jim Quinn

Palmyra Borough
Bill Crowther
Councilman Joe Ehrenreich

Pennsauken Township
Bernie Kavanagh

Voorhees Township
Joe Hale

Winslow Township
Ed McGlinchey
Police Chief Brian Valerio

Burlington County
Carol Thomas

Camden County
Doug Griffith

Cross County Connection TMA
Bill Ragozine
Paul Heller

NJDOT
Jim Badgely
Debbie Kingsland

NJ 73 CORRIDOR STUDY

Publication No.: 00023

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Geographic Area Covered: Berlin Borough, Berlin Township, Cherry Hill Township, Chesilhurst Borough, Cinnaminson Township, Evesham Township, Maple Shade Township, Moorestown Township, Mount Laurel Township, Palmyra Borough, Pennsauken Township, Voorhees Township and Winslow Township

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 NJ 73 Corridor in Burlington County and Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case NJ 73 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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