

ROUTE 18 CORRIDOR OLD BRIDGE TOWNSHIP PART 1

Pedestrian Safety



Transit Enhancement



Park & Ride and Commuter Shuttle Service



Middlesex County
Department of Planning
December, 2007

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EXECUTIVE SUMMARY
ROUTE 18 CORRIDOR PEDESTRIAN SAFETY, TRANSIT
ENHANCEMENT, PARK & RIDE AND COMMUTER SHUTTLE
SERVICE IN OLD BRIDGE TOWNSHIP

New Jersey Route 18 is a major urban principal arterial highway, a north-south divided roadway that serves as a major route to the New Jersey shore, traversing Middlesex and Monmouth Counties. Route 18 in East Brunswick Township has evolved into a heavily developed major retail shopping corridor and employment center. Route 18 in Old Bridge Township is primarily a limited access highway with fewer grade crossings, driveways and curb cuts than the commercialized section in East Brunswick.

Route 18 is served by a number of local and New York City bound commuter buses. Passengers in East Brunswick have access to bus stations and park and ride facilities, while those in Old Bridge board the buses at bus stops along the highway. Walking to and from the bus stops in Old Bridge is hazardous because of high traffic volumes, speed limits, lack of sidewalks, and unsafe intersections.

Congestion along this intensely developed corridor has increased dramatically due, primarily, to population and employment growth in the region, especially in the City of New Brunswick, which is experiencing intense office, commercial and residential development. Congestion has been exacerbated during the past year due to the New Jersey Department of Transportation (NJDOT) improvements to Route 18 in New Brunswick. Sections 2F, 7E and 11H, currently under construction, runs from Route 1 to the Northeast Corridor Amtrak Line north of Route 27 and includes roadway rehabilitation, reconstruction and operational improvements to this stretch of highway.

A previous project entitled, "Route 18 Pedestrian Crossing Study to Enhance Safety and Public Transit Use," dated September, 2005 addressed the need for improved pedestrian facilities along N.J. Route 18 between Naricon Place in East Brunswick Township to the Middlesex County Routes 516/527 interchange in Old Bridge Township.

The purpose of this two part study is to provide safe and convenient pedestrian access to transit along the Route 18 corridor in Old Bridge Township, and to alleviate congestion along the Route 18 corridor from Old Bridge Township to New Brunswick.

One focuses on improvements that will enhance pedestrian safety at key intersections along the Route 18 corridor from the County Route 516/527 Interchange to the Route 9 interchange in Old Bridge and the Monmouth County border.

Two examines the feasibility of a new park and ride facility in the vicinity of the Routes 9/18 interchange in Old Bridge and the feasibility of a new commuter shuttle or express bus service to New Brunswick.

PART ONE

The Part One study area includes the Route 18 corridor in Old Bridge Township, from the Route 18 and County Routes 516/527 interchange to the Texas Road/Routes 9 and 18 junction. Middlesex County Department of Planning staff examined 13 key intersections along this corridor to determine deficiencies and recommend improvements to enhance pedestrian safety.

The New Jersey Department of Transportation (NJDOT) has redesigned the CR 516/527 interchange and the intersection of Route 18 and Ferry Street. NJDOT and Old Bridge Township have proposed closing the median break between Maple Street and Pine Tree Boulevard. The *Old Bridge Crossroads Redevelopment Plan* proposes improvements to the Route 18/Marlboro Road and Route 18/Spring Valley Road intersections.

This study recommends pedestrian safety improvements to the following intersections:

- Bentley Avenue and Southwood Drive
- Pedestrian Overpass at St. Thomas the Apostle Church and School
- Birch Street
- Pine Street
- Maple Street
- Oak Street
- Pine Tree Boulevard
- Foxborough Drive / Marlboro Road

The recommendations include:

- Bus stop relocations, where feasible;
- Enhanced intersection treatment, including highly visible crosswalks;
- Signage to alert vehicles at pedestrian crossings;
- Pedestrian countdown on traffic signals to clarify the pedestrian crossing location and the time available to cross;
- Extension of safety fencing within the median to prevent pedestrians from crossing the highway;
- Development of a “kiss and ride” bus stop facility.

The entire Route 18 corridor in Old Bridge needs to be more pedestrian and bicycle friendly, a goal that can be reached by providing better transit service and access to transit, infrastructure improvements, bicycle and pedestrian facilities. Recommended improvements include:

- A multi-use path on north and southbound Route 18 from the Routes 516/527 Interchange to the Route 9 Junction, with improved access at all intersections along the highway.
- Sidewalks along the stretch of north and southbound Route 18 where bus stops exist to enhance safety for bus passengers and other pedestrians.
- Pedestrian amenities such as all weather shelters, lighting and other safety measures at all bus stops along Route 18.

Recommendations for transit improvements along the corridor include:

- More frequent, on time service, and on time transfers on local bus routes;
- Extend lines to cover gaps in service;
- Coordinate transit services among the different carriers, facilitate transfers among transit providers, and create intercepts, including improvement of northbound and southbound connections between the Route 9 and Route 18 transit services.
- Increase the linkage between regional and local bus routes;
- Relocate bus stops away from the NJ 18 travel lanes, where possible;
- Consider extending the proposed light rail or bus rapid transit (BRT) system that would connect residential and employment centers in New Brunswick, Edison and Piscataway to East Brunswick and Old Bridge. This is a long range recommendation.

PART TWO

Part Two explores ways to alleviate congestion along the heavily traveled Route 18 corridor from Old Bridge Township to the City of New Brunswick in Middlesex County by attracting and supporting additional public transit trips to commercial and employment centers in New Brunswick.

This study examines the potential for a park and ride facility in Old Bridge, and the feasibility of launching a new commuter shuttle service, or expanding existing public transit, from the park and ride lot to New Brunswick as means to help alleviate peak traffic congestion along the Route 18 corridor and in the City. This service could also be expanded to include transit or shuttle service beyond New Brunswick to employment centers in Edison and Piscataway.

The Part Two study area includes the Route 18 corridor from the Routes 9 and 18 interchange in Old Bridge to the City of New Brunswick. The corridor is part of the target area ridership shed for the proposed park and ride and bus or shuttle service. The ridership shed includes Old Bridge and East Brunswick Townships in Middlesex County; Marlboro, Manalapan and Freehold Townships, and the Boroughs of Freehold and Englishtown in neighboring Monmouth County. These communities have relatively easy access to Route 18 and would benefit from a regional park and ride facility in the Routes 9 and 18 vicinity with shuttle service to New Brunswick. The Borough of Englishtown is included because of its proximity to Manalapan and Old Bridge Townships.

Park and Ride Facilities

A key aspect in determining the feasibility of express bus or commuter shuttle service from Old Bridge to downtown New Brunswick is location. Ideally, a park and ride lot should be on a major roadway convenient to residential areas and bus routes, in this case as close as possible to the Routes 9 and 18 Interchange to accommodate commuters from Old Bridge and adjacent Monmouth County municipalities. The facility should be easily accessible from the major roadways and large enough to accommodate the number of vehicles generated by shuttle bus commuters. The facility should be designed to maximize lot circulation and pedestrian safety. It should be well lighted, safe, secure and attractive, with amenities such as shelter from inclement weather. The park and ride lot should have adequate bicycle accommodations.

Staff examined existing parking facilities and vacant properties to determine their feasibility as park and ride lots for the proposed Old Bridge to New Brunswick shuttle or express bus service. These included seven existing Old Bridge Township Parking park and ride facilities and one park and ride lot just over the border in Marlboro Township, Monmouth County, all situated on northbound Route 9 and used by New York bound commuters; the Old Bridge Township Board of Education bus parking lot on southbound Route 9; parking at the recently opened Shoppes at Old Bridge shopping center; and eight vacant parcels on Route 9, Texas Road and Route 18.

None of the existing Township-operated facilities are suitable for use as a park and ride lot for the proposed Old Bridge to New Brunswick shuttle because they are at or beyond capacity.

Only one of the vacant lots, a parcel situated on Texas Road near Route 9, is buildable, but contains slightly less than two acres. The remaining vacant lots are covered by wetlands

The park and ride lot at Regal Cinema in Marlboro Township and the Shoppes at Old Bridge parking lot, both located on northbound Route 9 and Texas Road, are feasible as park and ride facilities for the proposed Old Bridge to New Brunswick shuttle or express bus.

Two others sites that could be developed as park and ride lots include the vacant parcel adjacent to the Raritan Bay Medical Center on Ferry Road and Route 18 northbound, and the Old Bridge Township Board of Education bus parking lot situated off Route 9 southbound.

Commuter Shuttle and/or Express Bus Route Service

Two major goals of this study are to alleviate congestion along the Route 18 corridor from Old Bridge to New Brunswick and to reduce reliance on the automobile. The objectives are to enhance the use of alternate modes by making access to commuter bus service safer and more appealing, and to attract and support additional public transit trips to commercial and employment centers in New Brunswick and the region.

The introduction of a new express bus or shuttle route to serve the Route 18 travel corridor between Old Bridge and New Brunswick is a way to alleviate congestion by reducing single occupancy vehicle commuter trips along Route 18 into downtown New Brunswick. It is anticipated that the express bus or shuttle service could attract commuters from park and ride locations along Routes 9 and 18. With gas prices rising, a threshold of interest in bus or shuttle service for the regional trip is becoming more attractive. Hence, this study examines possible routes serving potential park and ride locations that would facilitate commuter bus or shuttle service to New Brunswick.

Staff explored five potential express bus or commuter shuttle routes from Old Bridge to New Brunswick, Proposed Routes "A" through "E." Staff drove each of the proposed routes during a.m. and p.m. peak periods to determine travel time and peak period travel conditions. All routes originated at Texas Road and the Routes 9/18 Interchange in Old Bridge Township.

Proposed Route "A, the shortest and fastest route, runs from the Routes 9 and 18 interchange at the Monmouth County border along Route 18 to the New Brunswick train station. The remaining routes also start at this interchange but bypass Route 18 by using county and local roads. While Proposed Route "A" is shorter and faster, all routes could be attractive if the bus or shuttle service offers passengers a convenient, comfortable ride at an affordable cost.

In light of the significant level of transit service existing on the Route 18 and Route 9 corridors, it is recommended that the connections between Route 9 and 18 bus services be improved to facilitate transfers in both the north and southbound directions. Possible locations to consider for improvements include the Route 9/Ticetown Road/Throckmorton Lane interchange area in Old Bridge for transfers between the Route 18 north and southbound services with the NJ Transit 818 local bus service between New Brunswick and the Old Bridge Municipal Complex on County Route 516.

Future Studies

- The feasibility of regional bus or shuttle service by extending Proposed Route "A" from Freehold Township to New Brunswick via Routes 9 and 18 should be explored in a future study. This should be explored with NJ Transit and Monmouth County.
- The Middlesex County Improvement Authority completed a study that explores the potential of the Raritan River as a major transportation, recreational and economic asset. The study proposes ferry and water taxi service and facilities for recreational boaters, including a marina and floating dock. The feasibility of water taxi service from Old Bridge to New Brunswick should be explored in conjunction with bus shuttles, contingent upon dredging portions of the Raritan River and the South River to improve navigability.

ROUTE 18 CORRIDOR PEDESTRIAN SAFETY, TRANSIT ENHANCEMENT, PARK & RIDE AND COMMUTER SHUTTLE SERVICE IN OLD BRIDGE TOWNSHIP

INTRODUCTION

Middlesex County has experienced significant growth in population and employment during the past decade. This growth has resulted in major increases in vehicular traffic volumes, particularly along major roadways such as N.J. Route 18, a major urban principal arterial highway. Route 18 is a north-south divided highway that serves as a major route to the New Jersey shore, connecting I-287 in Piscataway Township, Middlesex County and N.J. Route 138 in Wall Township, Monmouth County.

The portion of Route 18 in Middlesex County provides vehicular access to residential, employment, education and recreation centers throughout New Jersey via the New Jersey Turnpike, I-287, U.S. Route 1 and other major roadways. Route 18 in Old Bridge and East Brunswick is also a land service highway, providing access to local and regional commercial development. In addition, the Route 18 corridor in Old Bridge and East Brunswick is served by several local and New York bound commuter buses. Safe pedestrian access to transit services is of major concern.

Congestion along this intensely developed corridor has increased dramatically due, primarily, to population and employment growth in the region, especially in the City of New Brunswick, which is experiencing intense office, commercial and residential development. Congestion has been exacerbated during the past year due to the New Jersey Department of Transportation (NJDOT) improvements to Route 18 in New Brunswick. Sections 2F, 7E and 11H, currently under construction, runs from Route 1 to the Northeast Corridor Amtrak Line north of Route 27 and includes roadway rehabilitation, reconstruction and operational improvements to this stretch of highway.

The purpose of this study is twofold:

To provide safe and convenient pedestrian access to transit along the Route 18 corridor in Old Bridge Township, and

To alleviate congestion along the Route 18 corridor from Old Bridge Township to New Brunswick.

A previous project entitled, "Route 18 Pedestrian Crossing Study to Enhance Safety and Public Transit Use," dated September, 2005 addressed the need for improved pedestrian facilities along N.J. Route 18 between Naricon Place in East Brunswick Township to the Middlesex County Routes 516/527 interchange in Old Bridge Township.

Part One of this study focuses on the need for pedestrian improvements along the Route 18 corridor from the County Route 516/527 Interchange to the Route 9 interchange in Old Bridge and the Monmouth County border. Figure 1 page 2-A, is an aerial photograph of the Route 18 corridor region in Old Bridge.

Part Two of this study examines the feasibility of a new park and ride facility in the vicinity of the Routes 9/18 interchange in Old Bridge and the feasibility of a new commuter shuttle or express bus service to New Brunswick. Figure 2, page 2-B, is a map showing the Part Two study area that includes the potential ridership shed.

Figure 1
NJ 18 Corridor Region
Old Bridge Township, NJ



0 2,050 4,100 8,200 Feet

0 0.5 1 2 Miles



Middlesex County Planning Department
Division of Environment, Parks & Comprehensive Planning
April 2007

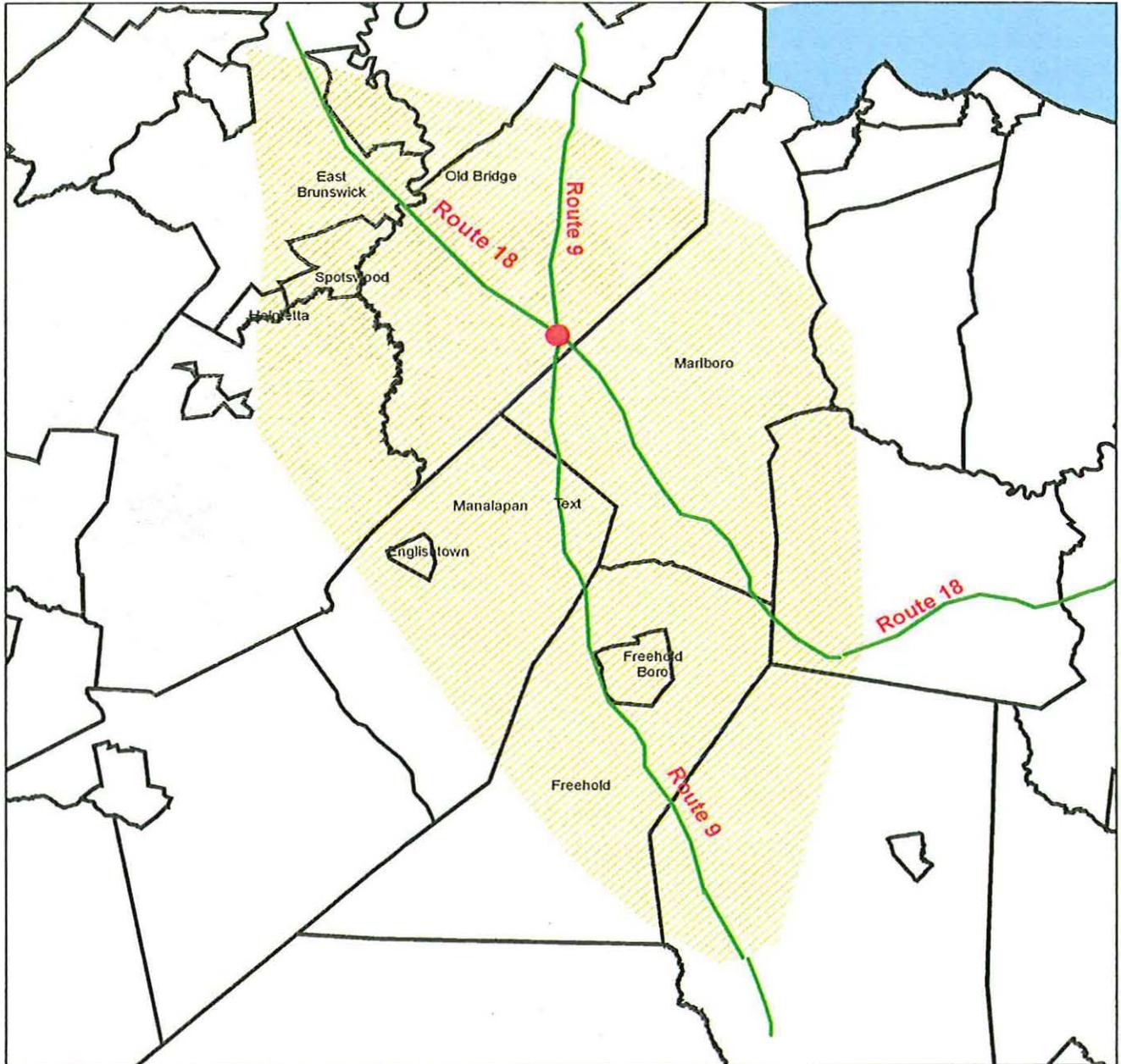
CMBridgeCorridor.mxd

2-A

2-A

Figure 2

TARGET AREA FOR RIDERSHIP SHED OLD BRIDGE PARK & RIDE AND SHUTTLE SERVICE TO NEW BRUNSWICK



● Potential Park & Ride Location

Prepared by:
Middlesex County Department of Planning

0 0.5 1 2 Miles
|-----|-----|-----|-----|



GOALS AND OBJECTIVES

Goals

- I. Provide safe, attractive and convenient pedestrian and bicycle access along the Route 18 corridor in Old Bridge Township.
- II. Enhance alternative mobility options through safe pedestrian accommodations to access nearby transit services in Old Bridge to complement the northern sections of Route 18 in Middlesex County.

Objectives:

1. Identify existing problem areas along the Route 18 corridor in Old Bridge, including key intersections, pedestrian crossings and bus stops.
2. Recommend improvements that will enhance safe and convenient pedestrian and bicycle access and mobility along this corridor.
3. Enhance safe pedestrian access and mobility for commuters and other persons using local and New York bound buses along the corridor.
4. Improve accessibility for low income, minority and mobility impaired populations by making public transit and non-motorized modes of transportation safer and more convenient for those who do not drive or cannot afford an automobile.

Goals

- III. Alleviate congestion along the Route 18 corridor from Old Bridge to New Brunswick.
- IV. Reduce reliance on the automobile.

Objectives

5. Enhance the use of alternate travel modes by making access to commuter bus service safer and more appealing.
6. Attract and support additional public transit trips to commercial and employment centers in East Brunswick and New Brunswick.

PART 1 - PEDESTRIAN SAFETY

I. GENERAL INFORMATION

Demographic Analysis

Data from the 1990 and 2000 Census provide a demographic snapshot of the Route 18 corridor in Old Bridge Township. Figure 3, page 4-A, shows the five census tracts along the corridor.

Total population in these tracts was 17,716, or 29.3 percent of the total Township population, according to the 2000 Census. Total population in the tracts increased by 9.8 percent, from 15,990 in 1990 to 17,716 in 2000. The median age was 37.7, with 24.6 percent under age 18 and 11.1 percent over 65. The population is aging. Median age in 1990 was 32.7 in 1990, a five year increase.

There were 5,590 households within the census tracts in 1990 and 6,360 in 2000, a 12.1 percent increase. Median household income grew from \$48,473 in 1990 to \$63,489 in 2000, a 23.7 percent increase.

The number of persons 16 and over in the workforce living in the census tracts decreased by 9.7 percent, from 79.1 in 1990 to 69.4 percent in 2000, while the number working outside of the county increased by 10.6 percent, from 35.9 percent in 1990 to 46.6 percent in 2000.

A total of 33.5 percent of the workers in the census tracts held management and professional jobs in 2000, while 13.3 percent were service workers; 32 percent held sales and office jobs, and 21.2 percent worked in construction, maintenance, production and transportation.

The primary means of travel for workers living in the census tracts, according to the 2000 Census, was the single occupancy vehicle (SOV). Nearly 80 percent drove alone, while 11.4 percent carpooled, 9.1 percent used public transit, and 1.5 percent walked. The number of persons bicycling to work was negligible.

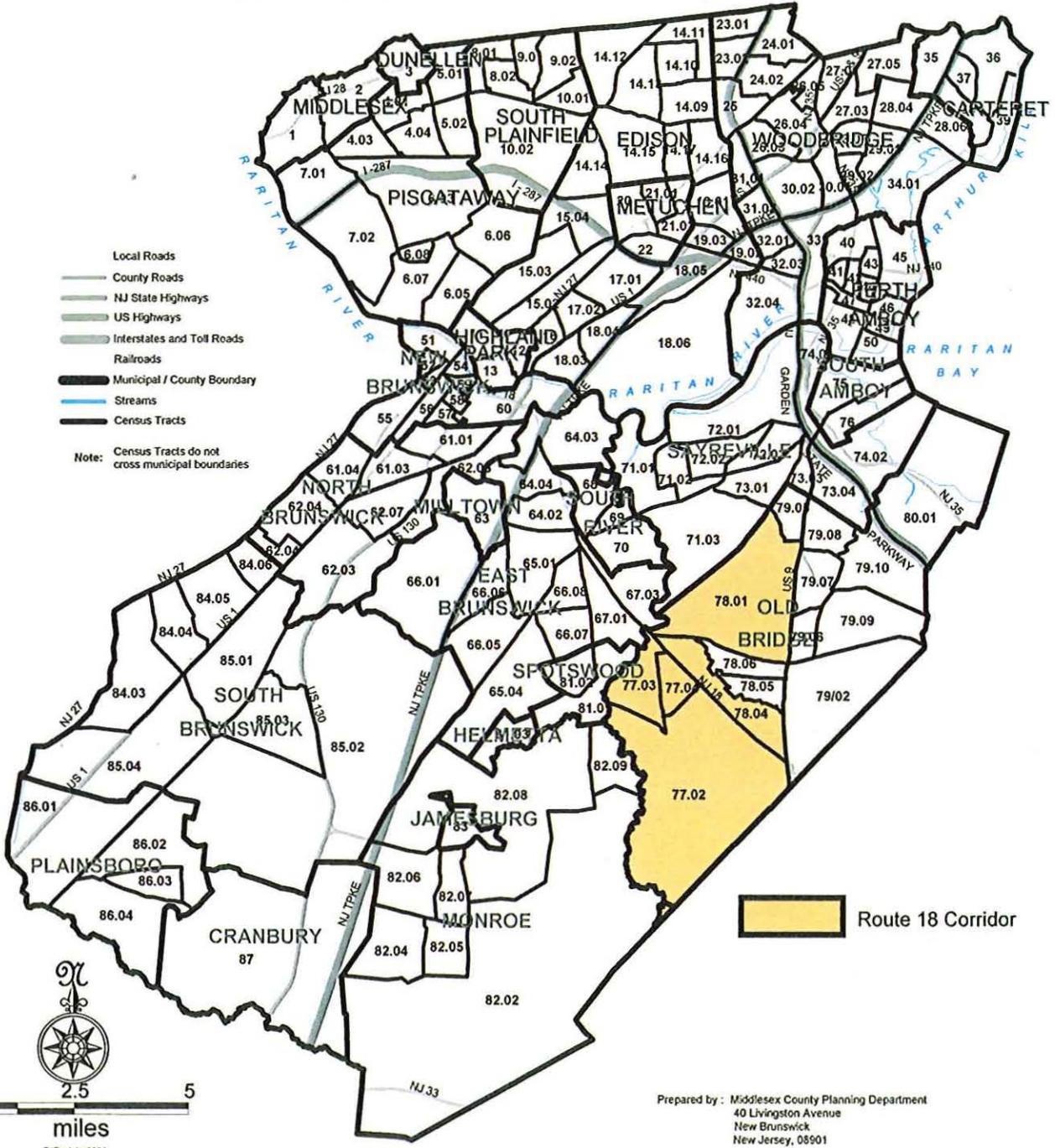
The journey to work choices were similar in 1990; however, the number of persons using the various means of transportation changed between 1990 and 2000. Those driving alone decreased by four percent. Carpooling increased by two percent while public transit decreased by 24.8 percent. The number of persons who walked to work increased by 44 percent, while bicycling decreased by 79 percent.

Mean travel time to work in the census tracts increased by 6.6 minutes, from 31.4 minutes in 1990 to 38 minutes in 2000.

Tables with detailed information from the 1990 and 2000 Census are in Appendix 1.

Figure 3

N. J. Route 18 Corridor Census Tracts - 2000 Old Bridge Twp., Middlesex County, N.J.



The Route 18 Corridor

Route 18 is classified as a major urban principal arterial highway. The four mile corridor between the County Routes 516/527 Interchange and the Route 9 Interchange in Old Bridge is a four lane, north-south, divided, bituminous concrete roadway (two lanes in each direction, with a passing lane), separated by a grass median as, depicted in Figures 4 and 5, pages 5-A and 5-B, the New Jersey Department of Transportation 2005 Straight Line Diagrams for the corridor. Access to the highway is via two major interchanges, jug handle turns, and median breaks.

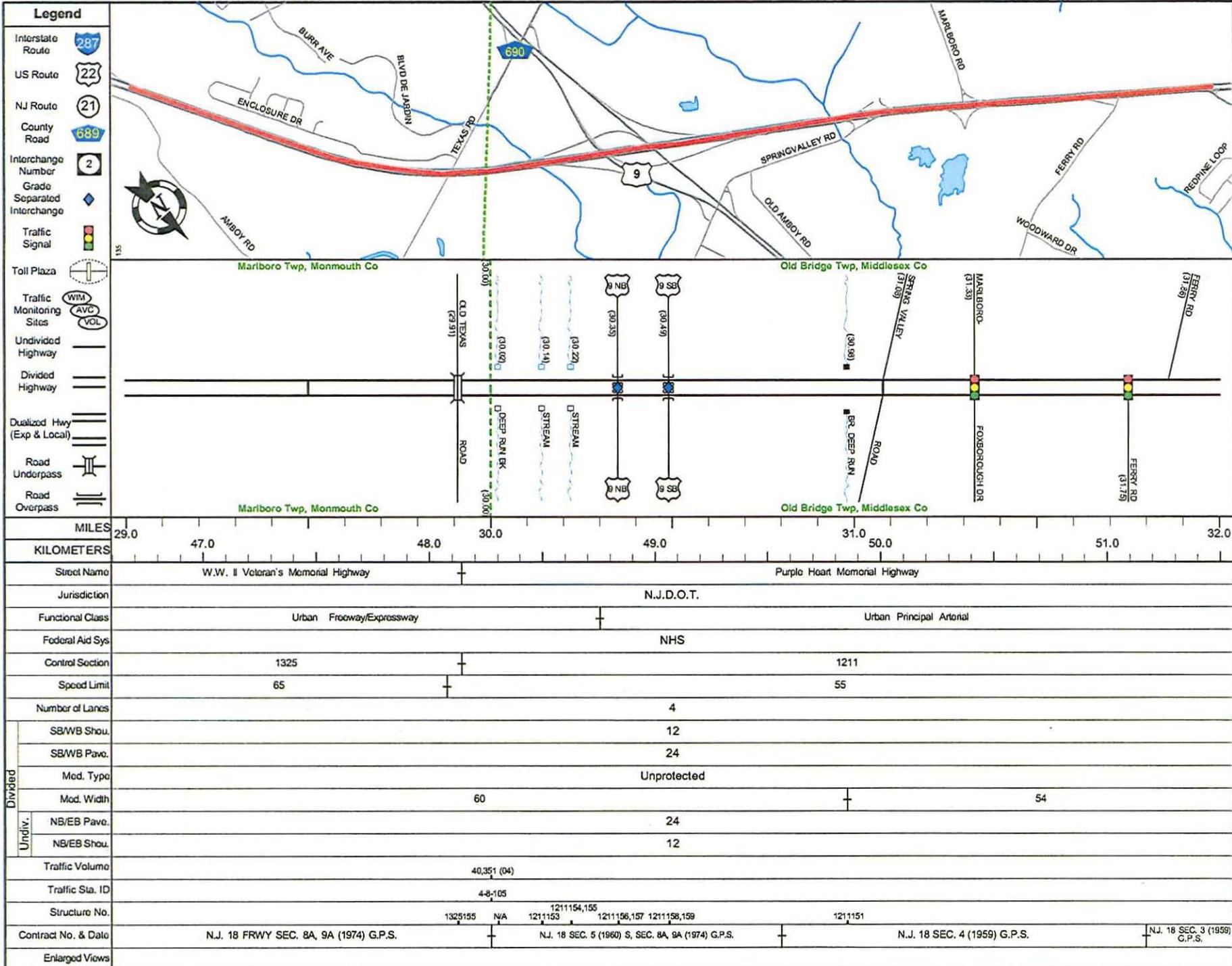
Some of the intersections are signalized. NJDOT installed an adaptive real time traffic control system in 1996 in an attempt to move traffic and alleviate congestion. This system was more recently changed to operate on the conventional time of day signal control synchronized by a separate closed loop system.

There are no sidewalks or bicycle facilities along the entire corridor. There are wide shoulders along the north and southbound sides of the highway; however; it is hazardous to bicycle or walk because of high traffic volumes, speed limit and unsafe intersections.

There are very few intersections where pedestrians, primarily persons utilizing the bus system along the corridor, can cross Route 18. These are signalized and are at great distances from the bus stops. Figure 6, "NJ 18 Corridor Old Bridge Township," page 5-C, shows the Route 18 corridor study area and identifies all of the intersections and access points. This study focuses on the crossings shown on this map. The crossings will be examined in detail and recommendations will be proposed in Section 2 of this report.

Route 18 in Monmouth County just before the Route 9 Interchange in Old Bridge is classified as an Urban Expressway, with 65 miles per hour speed limit. This drops to 55 mph in Old Bridge. Speed limits in the study area range from 40 to 55 miles per hour. The average speed limit is 45 miles per hour.

Annual Average Daily Traffic Volumes (AADT) at key intersections on NJ 18, ranged from 28,375 to 39,603 in 2003, according to NJDOT. Figure 7, "Traffic Volumes NJ 18 Corridor Old Bridge Township," page 5-D, shows traffic volumes on Route 18 and several intersecting roadways from 1991 through 2003. Traffic increased from 29,760 vehicles in 1991 to 39,603 in 2003 on Route 18 near the Spring Valley Road intersection. 1991 volumes at Route 18 and the County Routes 516/527 intersection were 35,380. 1996 volumes on Route 18 in the vicinity of Maple Avenue and the Pine Gate Apartment complex were 38,470 and 37,970 respectively. 1999 volumes at the Route 9 ramp were 6,021. Volumes on Route 9 near Texas Road and the Route 18 interchange decreased from 54,780 in 2000 to 28,375 in 2003. Traffic volume data are shown in Appendix 2.

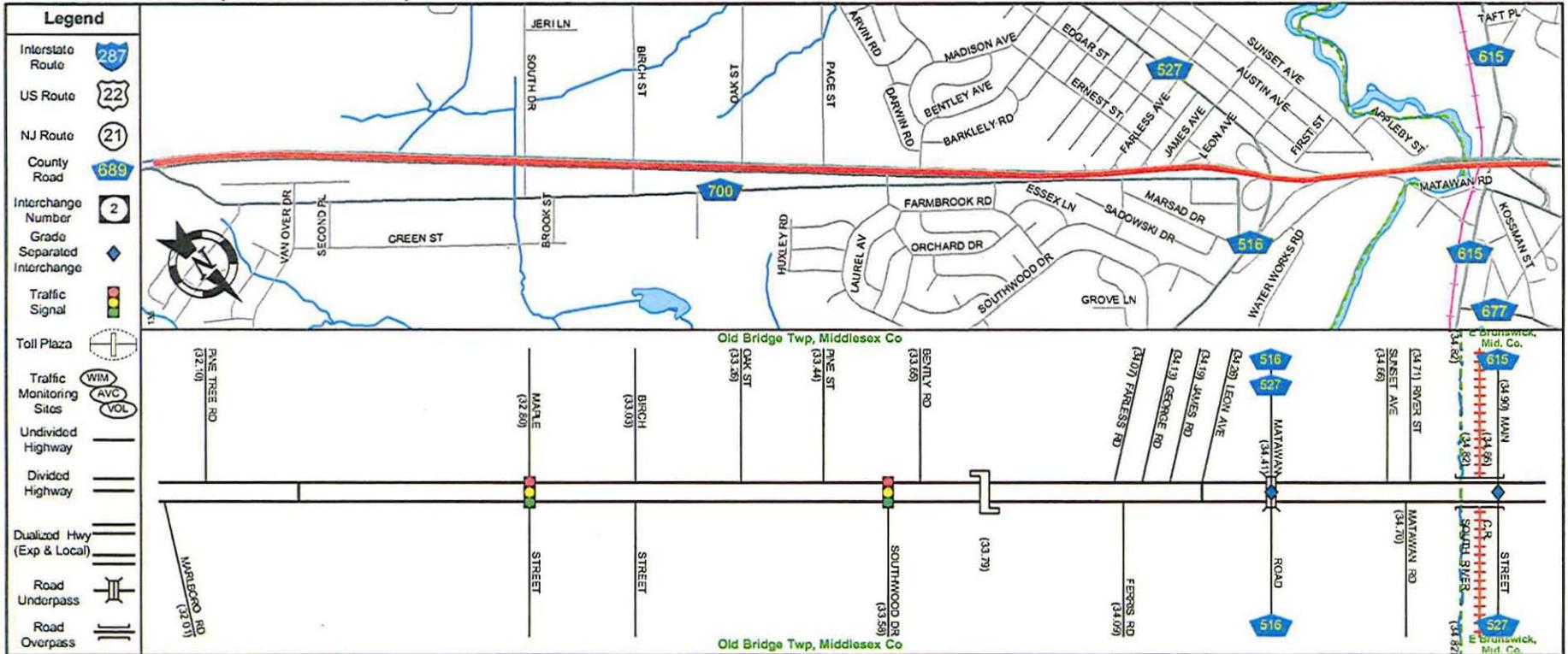


SRI = 0000018

Date last inventoried: March 2005

Source: NJDOT Straight Line Diagrams

5-A



MILES	32.0	52.0	53.0	33.0	54.0	34.0	55.0	56.0	35.0	
KILOMETERS										
Street Name	Purple Hoar Memorial Highway								W.W. II Veteran's Memorial Highway	
Jurisdiction	N.J.D.O.T.									
Functional Class	Urban Principal Arterial									
Federal Aid Sys	NHS									
Control Section	1211				1212					
Speed Limit	55		50		45		40			
Number of Lanes	4				8					
Divided	SB/WB Shou.	12				10				0
	SB/WB Pav.	24				48				
Undiv.	Med. Type	Unprotected				Positive				
	Med. Width	54				VAR				7
Undiv.	NB/EB Pav.	24				48				
	NB/EB Shou.	12				10				0
Traffic Volume	37,970 (96)		38,470 (96)		35,380 (91)					
Traffic Sta. ID	612C128		62A128		415E102					
Structure No.					1211160		1211152		1212150	
Contract No. & Date	N.J. 18 SEC. 3 (1959) G.P.S.				N.J. S-28 SEC. 2A (1932) G.P.S., N.J. 18 (1953)					
Enlarged Views										

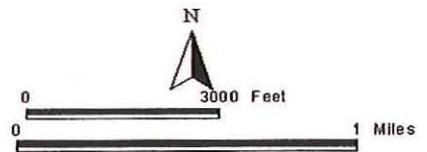
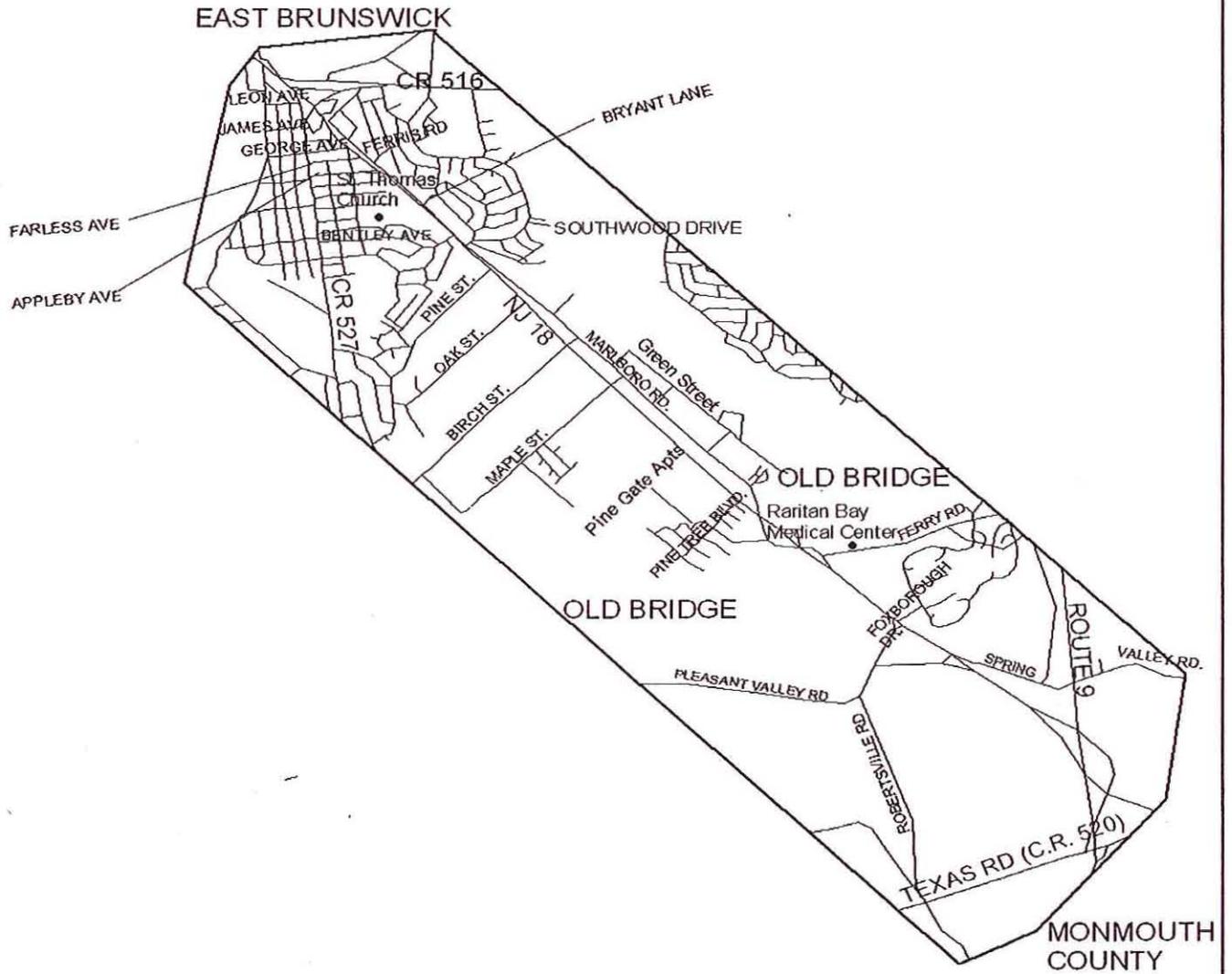
S-B

SRI = 0000018

Date last inventoried: March 2005

Source: NJDOT Straight Line Diagrams

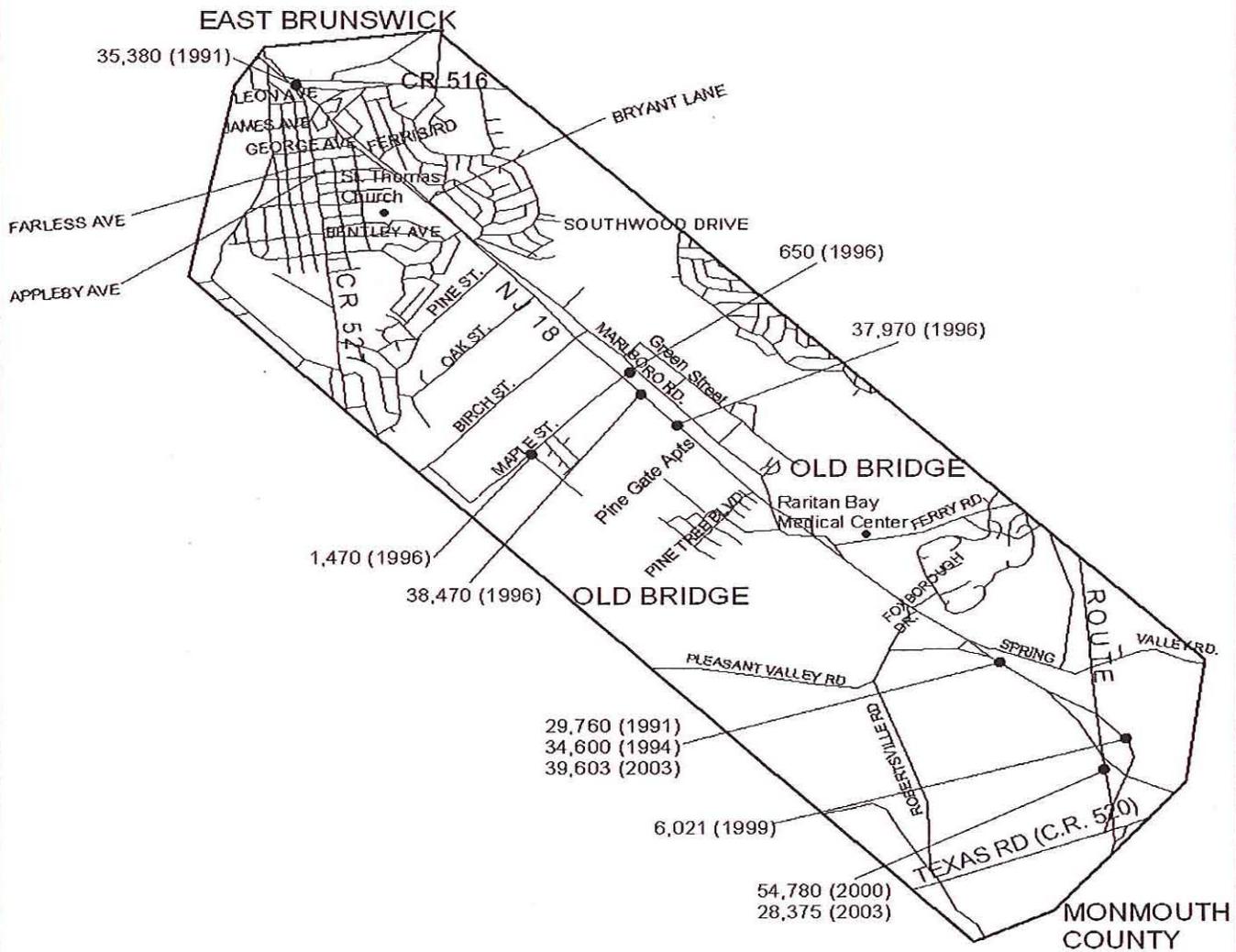
FIGURE 6
NJ 18 CORRIDOR
OLD BRIDGE TOWNSHIP



Middlesex County Planning Department
Division of Environment, Parks & Comprehensive Planning
January 2008

trafflot1.a.apr

**FIGURE 7
TRAFFIC VOLUMES*
NJ 18 CORRIDOR
OLD BRIDGE TOWNSHIP**



Source: New Jersey Department of Transportation,
Bureau of Data Development

* AAAT Traffic Volumes



0 3000 Feet

0 1 Miles



Middlesex County Planning Department
Division of Environment, Parks & Comprehensive Planning
January 2000

Route 18 Corridor – Old Bridge Accident Analysis

Staff consulted with Old Bridge Township Acting Police Chief Robert Bonfante regarding accidents along the Route 18 corridor. Accident locations are shown on Figure 8, entitled, "NJ 18 Corridor Accidents 2000-2004 Old Bridge Township," page 6-A, and on Table 1, "NJ 18 Accidents Old Bridge Township 2000-2004," pages 6-B to 6-D.

There were 656 accidents along the Route 18 corridor in Old Bridge during the five year period from 2000-2004. The following comments point to recurring problems at key intersections in the study area:

Route 18 and Ferry Road (181 accidents)

The greatest number of accidents in the five year period occurred at Ferry Road, where the Raritan Bay Medical Center is located. Ferry Road also provides access from Route 18 to Route 9. Rear end and T-bone accidents with left turn conflict points were predominant. The short left turn, six car stacking lane on southbound Route 18 has insufficient capacity, overflows into the passing lane affecting lane changes, requiring shorter more frequent cycle timing, affecting insufficient green time to northbound Route 18 in the A.M. rush, resulting in long queues.

The NJDOT proposes to improve this intersection. Among the improvements are double left 600 foot stacking lanes designed to facilitate left turns, which will accommodate 40 cars, allow for longer Route 18 green time, and improve safety at Ferry Road.. Restriping to accept double lefts off Route 18 merging with lefts into the hospital facilities will be required in design. Bus pull offs would work at stops on Ferry Road.

Construction is a priority. Left turns from Ferry Road to southbound Route 18 are also a source of conflict points requiring time and design solutions. Pedestrians crossing at Ferry Road have increased in recent years with the construction of the A & P Shopping Center at Rt. 9 and Ferry Road, attracting pedestrians from the Pine Tree Apartments on southbound Route 18. The design improvements must include pedestrian facilities.

Route 18 and Maple Street (126 Accidents)

The second highest number of accidents occurred at Maple Street, location of a service station and a WAWA convenience store. The northbound A.M. left turns into the WAWA have insufficient capacity in the stacking lane and queue spills into the fast passing lane, causing lane changes and accidents. This problem may worsen when the proposed Dunkin' Donuts is built next to the WAWA. The NJDOT should require the developer to provide a left turn extension.

Route 18 and Southwood Drive (75 Accidents)

The third highest number of accidents occurred at Southwood Drive and Route 18. Captain Bonfante suggested closing the Southwood Drive intersection and creating an intersection that lines up with Bentley Avenue, which would facilitate traffic flow. He suggested that using Marlboro Road as a service road to feed the proposed Route18 crossing at Bentley. This, he said, would have many positive traffic and access impacts.

**Table 1
NJ 18 Accidents
Old Bridge Township
2000-2004**

Location (Intersection with NJ 18)	Year	Number of Accidents	Total Accidents 2000-2004
Route 516 and Route 18	2000	32	102
	2001	24	
	2002	29	
	2003	6	
	2004	11	
Route 527 and Route 18	2000	0	20
	2001	5	
	2002	11	
	2003	2	
	2004	2	
Leon Avenue	2000	0	6
	2001	0	
	2002	2	
	2003	2	
	2004	2	
James Avenue	2000	0	1
	2001	0	
	2002	0	
	2003	0	
	2004	1	
George Avenue	2000	0	1
	2001	0	
	2002	1	
	2003	0	
	2004	0	
Farless Avenue	2000	1	2
	2001	0	
	2002	0	
	2003	0	
	2004	1	
Appleby Avenue	2000	0	1
	2001	1	
	2002	0	
	2003	0	
	2004	0	
Ferris Street	2000	0	2
	2001	1	
	2002	0	
	2003	0	
	2004	1	

Table 1
NJ 18 Accidents
Old Bridge Township
2000-2004

Location (Intersection with NJ 18)	Year	Number of Accidents	Total Accidents 2000-2004
St. Thomas the Apostle Church and School	2000	1	1
	2001	0	
	2002	0	
	2003	0	
	2004	0	
Bentley Avenue	2000	4	12
	2001	3	
	2002	1	
	2003	2	
	2004	2	
Southwood Drive	2000	3	75
	2001	22	
	2002	19	
	2003	16	
	2004	15	
Pine Gate Apartments	2000	0	1
	2001	1	
	2002	0	
	2003	0	
	2004	0	
Pine Tree Boulevard	2000	4	29
	2001	2	
	2002	9	
	2003	10	
	2004	4	
Pine Street	2000	0	1
	2001	0	
	2002	1	
	2003	0	
	2004	0	
Oak Street	2000	2	6
	2001	0	
	2002	3	
	2003	0	
	2004	1	
Birch Street	2000	2	10
	2001	1	
	2002	3	
	2003	1	
	2004	3	

**Table 1
NJ 18 Accidents
Old Bridge Township
2000-2004**

Location (Intersection with NJ 18)	Year	Number of Accidents	Total Accidents 2000-2004
Maple Street	2000	19	126
	2001	17	
	2002	21	
	2003	32	
	2004	37	
Marlboro Road	2000	9	36
	2001	4	
	2002	9	
	2003	9	
	2004	5	
Ferry Road	2000	25	181
	2001	37	
	2002	40	
	2003	31	
	2004	48	
Foxborough Drive	2000	7	49
	2001	9	
	2002	7	
	2003	8	
	2004	18	
Spring Valley Road	2000	10	49
	2001	3	
	2002	14	
	2003	9	
	2004	13	
Routes 9 and 18 Interchange	2000	1	36
	2001	12	
	2002	7	
	2003	6	
	2004	10	
Texas Road	2000	0	1
	2001	0	
	2002	0	
	2003	0	
	2004	1	
Total Accidents Route 18 Corridor Old Bridge Township 2000-2004			656

Spring Valley Road (49 Accidents)

Captain Bonfante said that closing the unsignalized Spring Valley Road crossing may be possible and said this clearly warrants a feasibility assessment. The need for the crossing will depend on land use decisions. The recently built Crossroads development and other proposed residential and commercial developments may be served by access to Routes 9 and 18 via Texas Road. (County Route 690).

Freeway Transition at Routes 9 and 18 (36 Accidents)

Captain Bonfante recommended enhancing the traffic signals to facilitate traffic transitions from the Route 18 Freeway northbound in Monmouth County to a land service highway north of Route 9, with traffic signals through Old Bridge. He suggested high intensity strobes in the center of the amber light and bright flashers at Foxborough Drive and Ferry Road. Drivers need a very strong wake up call as Route 18 downgrades from a limited access highway to a land service highway, with ingress and egress driveways, as well as cross streets, a median U-turn, and signalized intersections. Interrupting the drivers' trance state with lights and signs when entering Old Bridge will alert them to the transition. Signage with flashers could include "red ahead" signs.

Route 18 and County Routes 516 and 527 (122 Accidents)

There were 102 accidents at Route 516 and 20 at Route 527. NJDOT is currently in the process of improving the Route 18 and County Routes 516/527 Interchange. Captain Bonfante noted that fire and ambulance services often are called to respond at peak congestion times and are blocked when traffic doesn't pull over. He suggested that response time can be reduced if the signals are equipped to turn green with a remote sensing controller on the fire truck or ambulance and on signals on County Route 516 (Old Bridge Matawan Road) and County Route 527 (Englishtown Road), and stay green with a system override controlled by emergency vehicles. He requested the County assess the feasibility of implementing these improvements.

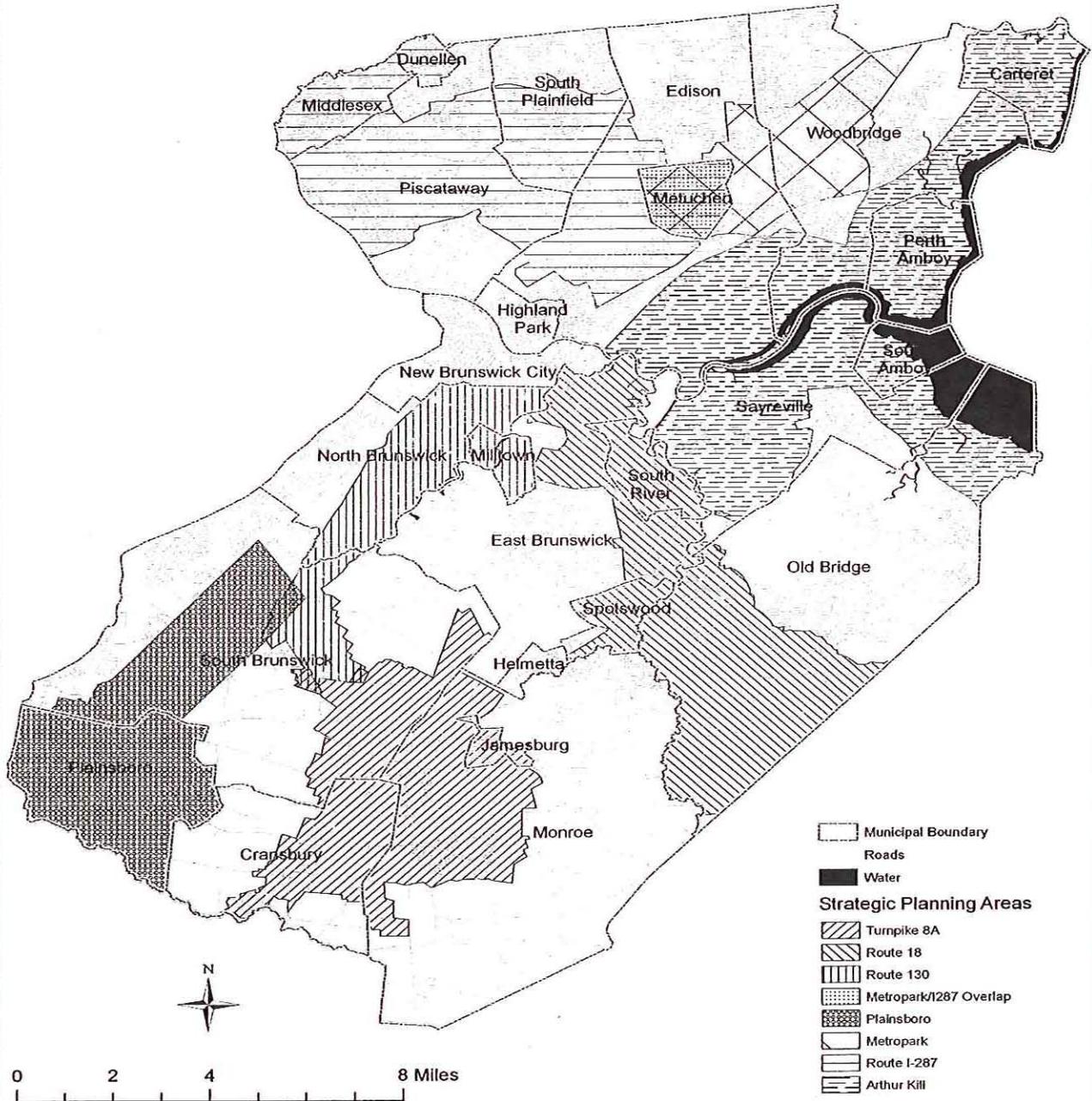
Accidents at other locations along Route 18 in Old Bridge during 2000 and 2004 include 49 at Foxborough Drive; 36 at Marlboro Road; 29 at Pine Tree Boulevard; 12 at Bentley Avenue; 10 at Birch Street; Six at Oak Street and at Leon Avenue; two at Appleby Avenue and at Ferris Street; one at James, George and Appleby Avenues and at Pine Street, Pine Garden Apartments, Oak Street, Texas Road and St. Thomas the Apostle Church and School.

Appendix 3 contains detailed information on accidents along the Route 18 corridor in Old Bridge.

Land Uses

Strategic Planning Areas in Middlesex County are locations where growth is most likely to be concentrated. These areas are located relative to development surrounding existing transportation facilities. They are shown on Figure 9, entitled, "Middlesex County Strategic Planning Areas," page 7-A. The study area in Old Bridge Township is within the Strategic Planning Area designated as "Route 18 Corridor."

Figure 9 Middlesex County Strategic Planning Areas



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 February 2007

SPA1BW.mxd

The Strategic Planning Areas give rise to the five Middlesex County transportation-oriented areas: Northwest, Northeast, County Seat, Central and South County. They are shown on Figure 10, entitled, "Transportation Study Areas," page 8-A. The Route 18 corridor in Old Bridge is within the Central study area, which also includes East Brunswick, South River, Sayreville, South Amboy and Spotswood.

Land uses along the northernmost section of the corridor are predominately urban, as shown on Figure 11, entitled, "Land Use NJ 18 Corridor Old Bridge Township," page 8-B. These areas are, for the most part, fully developed. Much of the land adjacent to the southern portion of the corridor consists of wetlands and forest, with some urban areas. This area includes the 1,722 acre John A. Phillips Open Space Preserve adjacent to southbound Route 18. The preserve also abuts Texas Road.

An analysis of tax maps for properties along the corridor shows that the predominate land use is residential. Figure 12, entitled, "Zoning NJ 18 Corridor Old Bridge Township," page 8-C, shows that most residential development is single family, with 1 to 2.5 dwelling units per acre. There are a few pockets of higher density single and multifamily dwellings, at five or more dwelling units per acre, adjacent to or within walking distance of Route 18, as shown on Figure 12.

2000 Census data show that single family dwelling units constituted 70.1 percent, and buildings with ten or more units constituted 12.6 percent of the housing stock within the corridor. The data show minimal increases in housing stock due to the lack of vacant land suitable for development. Single family housing increased by just 6.1 percent between 1990 and 2000 while multifamily units by 12.6 percent. This increase is due to the construction of age restricted housing.

There is some commercial development along the corridor, at Maple Street, Pine Tree Boulevard and Ferry Road, and nearby, at Spring Valley Road and Route 9. St. Thomas the Apostle is the only church and school immediately adjacent to southbound Route 18.

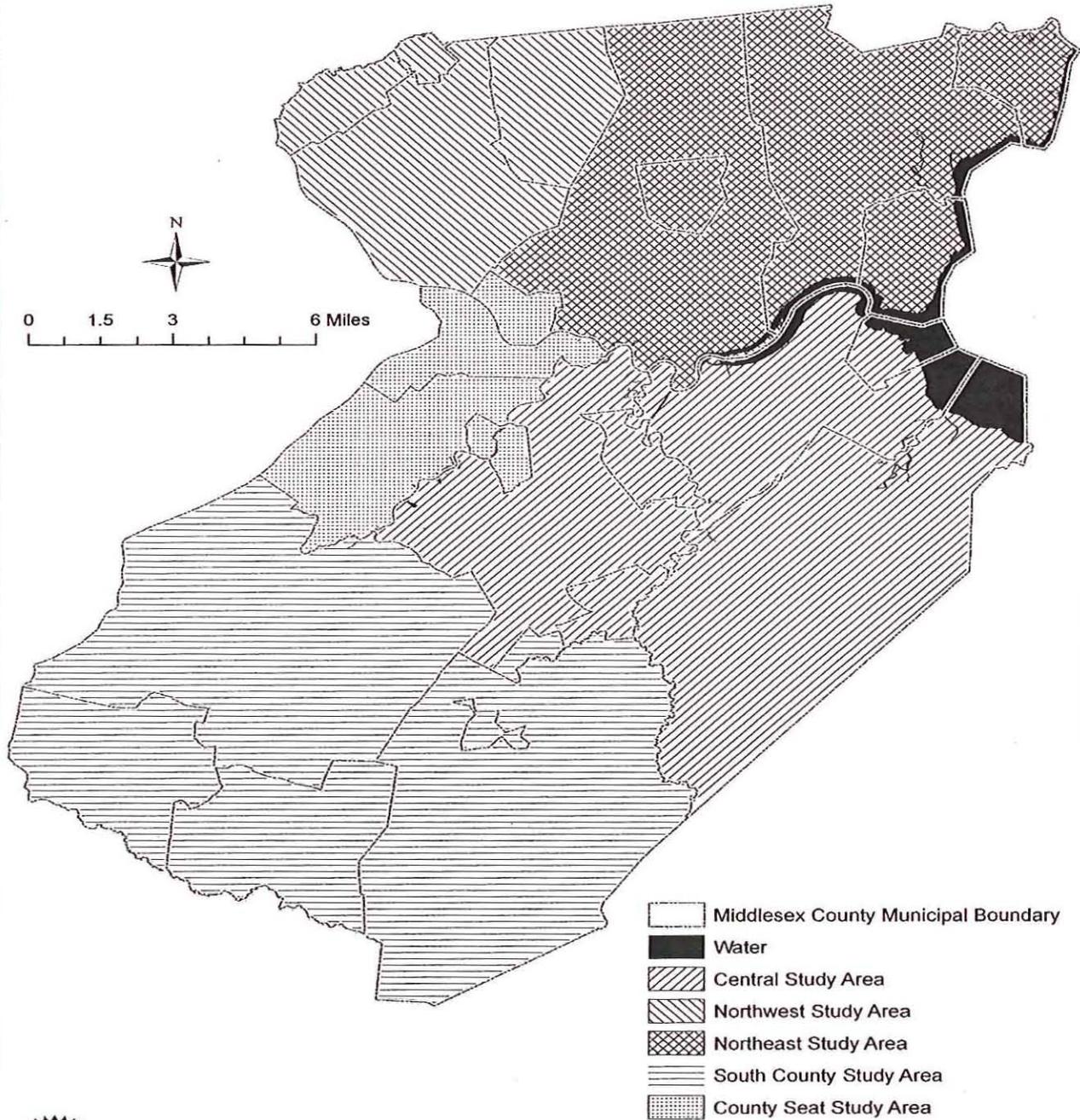
Figure 13, entitled, "Old Bridge Township Proposed Land Use," page 8-D, shows minimal changes from existing land uses along the Route 18 corridor. One area along the southern portion of Route 18, approaching Route 9, is designated as COI, or Commercial/Office/Industrial.

The Middlesex County Planning Department Land Development Review Division compiles data on development activity in the eight strategic planning areas, including the Route 18 Corridor, and issues annual reports based on the data. The report is based on development applications for the entire strategic area, including Old Bridge. While the corridor appears completely built out, development and redevelopment has occurred. Nonresidential development increased, with 457,507 additional square feet in 2005 and 89,226 additional square feet in 2004. Residential development decreased, with 94 additional dwelling units in 2005 and 110 in 2004. The number of new residential and nonresidential parking spaces also increased, with 1,709 additional spaces in 2005 and 401 in 2004.

Appendix 5 is a report entitled "Summary of Activity Within Middlesex County's Strategic Planning Areas," which contains detailed information on development activity in 2004 and 2005.

Middlesex County Planning Department staff conducted a "windshield survey" of specific land uses along Route 18 in Old Bridge. The results of the survey are shown in Appendix 4.

Figure 10 Transportation Study Areas

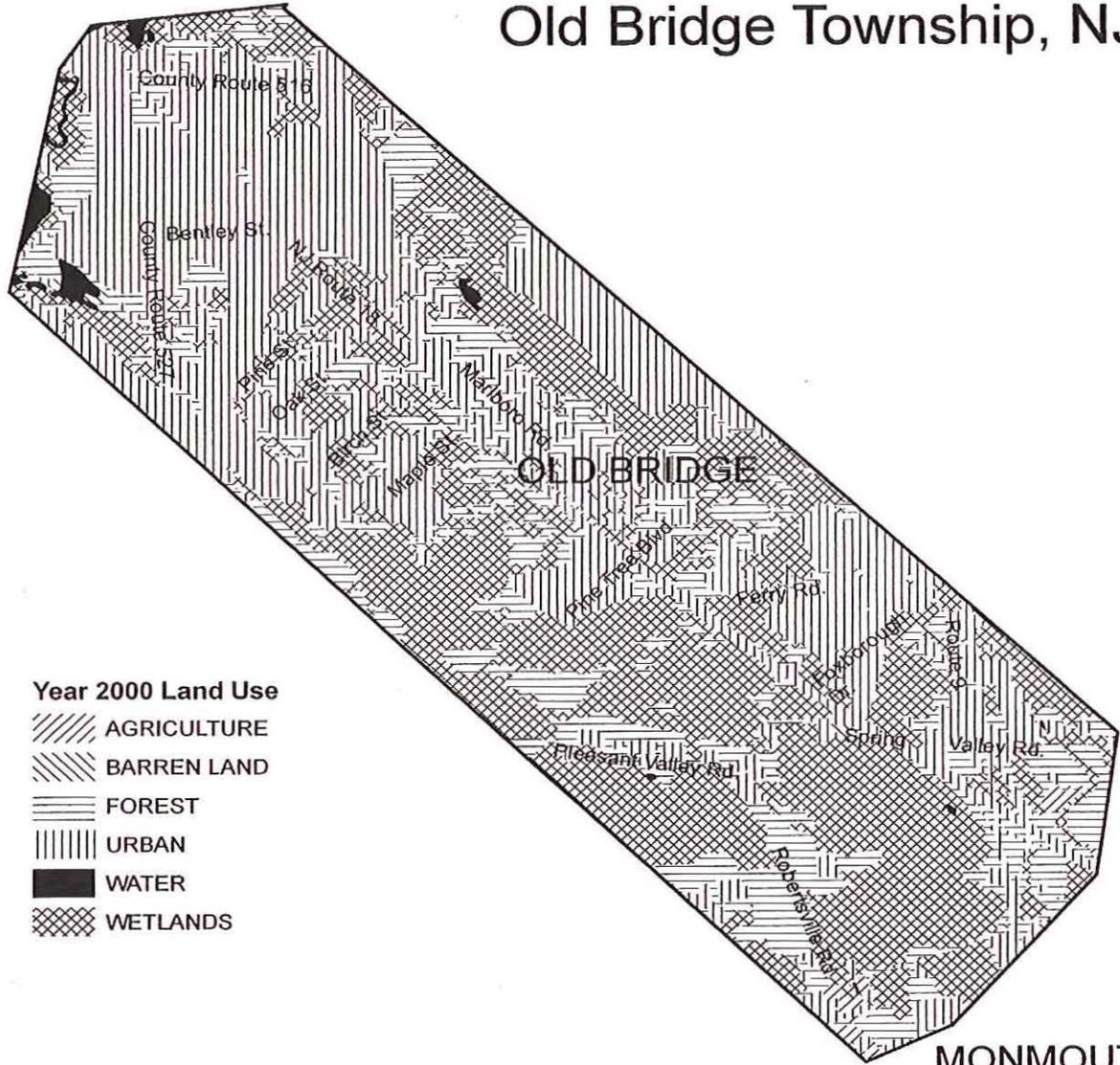


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Division of Environment, Parks & Comprehensive Planning
February 2007

Transport Study Areas.mxd

Figure 11 Land Use NJ 18 Corridor Old Bridge Township, NJ

EAST BRUNSWICK



MONMOUTH
COUNTY

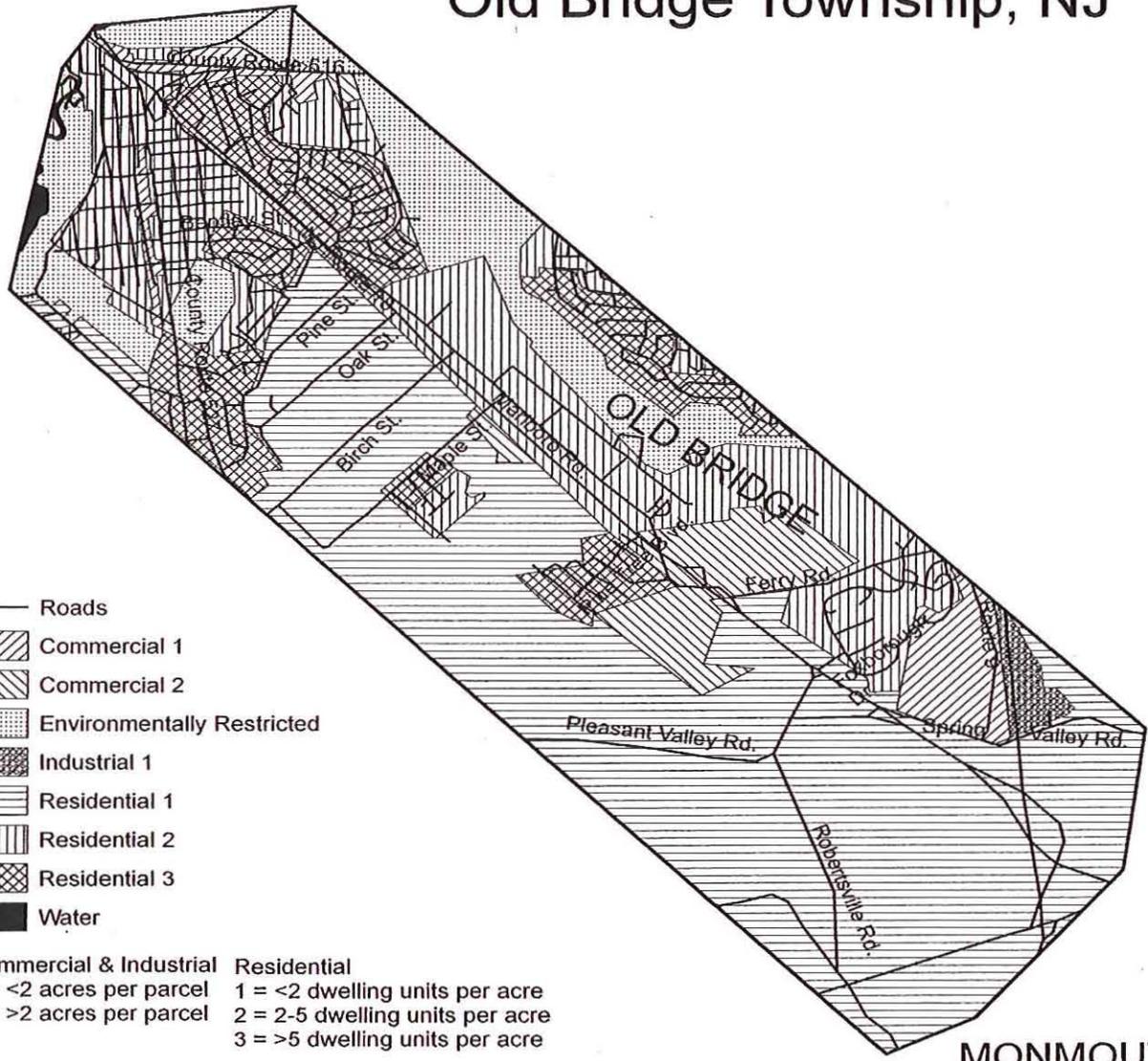


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February 2007

Route18CorridorLU.mxd

Figure 12 Generalized Zoning Composite NJ 18 Corridor Old Bridge Township, NJ

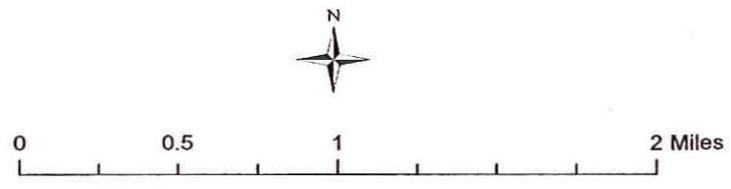
EAST BRUNSWICK



- Roads
- Commercial 1
- Commercial 2
- Environmentally Restricted
- Industrial 1
- Residential 1
- Residential 2
- Residential 3
- Water

Commercial & Industrial	Residential
1 = <2 acres per parcel	1 = <2 dwelling units per acre
2 = >2 acres per parcel	2 = 2-5 dwelling units per acre
	3 = >5 dwelling units per acre

MONMOUTH COUNTY



Middlesex County Planning Department
Division of Environment, Parks & Comprehensive Planning
February 2007

Route18CorridorZ.mxd

Pedestrian Traffic Generators

The Route 18 corridor in Old Bridge is almost completely automobile-oriented, with minimal pedestrian and bicycle activity due to the current nature of the highway and existing land uses. Bus stops are the major pedestrian traffic generators. Other uses that generate limited pedestrian traffic include single and multifamily dwellings, commercial, recreational, religious, public and educational facilities. More residents would walk, bicycle and use public transit if safe and convenient facilities such as sidewalks, marked crosswalks, bus shelters, and amenities such as lighting and benches were available.

Bus Stops

Fixed route bus service along Route 18 in Old Bridge generates the most pedestrian traffic. NJ Transit provides local bus service to New Brunswick and commuter service to Jersey City, Hoboken, Weehawken, Wall Street and the Port Authority Bus Terminal in New York City. Peak pedestrian commuter activity occurs between 6:00 and 7:30 a.m. and between 5:00 and 8:00 p.m., with no midday or weekend operation. Local bus service runs from 6:30 a.m. to 9:30 p.m. on hourly headways seven days a week.

The Middlesex County Area Transit (MCAT) runs an hourly shuttle Monday through Friday on both north and southbound Route 18 to Brunswick Square Mall in East Brunswick via South River, with service to Birchwood, Maher Manor and Raritan Bay Medical Center.

Bus stops are being relocated as part of the Route 18/County Routes 516/527 Interchange redesign and reconstruction project.

The following NJ Transit bus routes impact Route 18 in Old Bridge:

- The 138 Route runs from Spotswood to Monroe to Route 9 in Old Bridge via Texas Road to Ferry Road and on to Route 18 East Brunswick and New York City via the New Jersey Turnpike.
- The 68 Route originates at Bushnell Road in the Browntown section of Old Bridge, with stops at County Route 516 and Gaub Road, on to Route 18 East Brunswick and Jersey City-Weehawken via the New Jersey Turnpike.
- The 139 Route runs weekdays from Monmouth County to Englishtown, then, via Old Bridge Englishtown Road (Middlesex County Route 527), to Route 9 and to the Port Authority Bus Terminal in New York City. The route crosses Route 18 at the 516/527 Interchange, which is scheduled for reconstruction.
- The 134 Route runs from Bushnell Road in the Browntown section of Old Bridge, with stops at County Route 516 and Gaub Road, on to Route 18 East Brunswick and on to Wall Street in New York City via the New Jersey Turnpike.

- o The 818 local route originates at the Old Bridge Civic Center on County Route 516, and goes to Route 9 at Fairway Lane, Ticetown Road/Throckmorton Lane, through Southwood Drive and on to Route 18 East Brunswick and New Brunswick.

Bus stops on Route 18 are shown on Figure 14, entitled, "Bus Stops Study Area Intersections NJ 18 Corridor Old Bridge Township, page 10-A.

Schools

Schools in many Middlesex County municipalities, especially walking communities such as South River, New Brunswick and Highland Park, generate significant amounts of pedestrian traffic. Most pupils in Old Bridge do not walk to school. St. Thomas the Apostle is the only school on Route 18. It is located on the southbound side of the highway. Access from northbound Route 18 is via a pedestrian overpass that is not handicap accessible. There are no other crossings for these pupils.

The Southwood elementary school, located on Southwood Drive is the only other school near, but not in the study area. It is on Southwood Drive off of northbound Route 18.

Employment Facilities

There are few employment facilities along Route 18 in Old Bridge, and they are not pedestrian generators. There is a single office building, 1405 Route 18, with no pedestrian access. The Raritan Bay Medical Center on Ferry Road off northbound Route 18 is the only other employment facility. There is no pedestrian access to the hospital.

Commercial Facilities

The only commercial facility on Route 18 is the WAWA convenience store and service station. It is situated on southbound Route 18 south of Maple Street, and there is no pedestrian access.

Recreation Facilities

The only recreation facility on Route 18 is the Legends Golf Driving Range on the southbound side of the highway opposite Spring Valley Road. There is no pedestrian access.

Other Facilities

Single and multifamily residences adjacent to Route 18 in Old Bridge could be significant pedestrian generators if there were safe and convenient facilities such as sidewalks, safe crossings and other amenities.

There are extensive single family residential developments in close proximity to both sides of the highway. There is also a multifamily facility, the Pine Gate Luxury Apartments, on southbound Route 18 with access via Pine Tree Boulevard. There is no pedestrian access from Route 18.

**FIGURE 14
BUS STOPS
STUDY AREA INTERSECTIONS
NJ 18 CORRIDOR
OLD BRIDGE TOWNSHIP**



It should be noted that there are seven single family dwellings on Marlboro Road that have driveways on the northbound side of Route 18.

There is an assisted living facility with access on northbound Route 18, which does not generate significant pedestrian traffic.

The U.S. Post Office on the eastern side of Old Bridge Matawan Road (County Route 516) is a pedestrian generator, within walking distance of residences adjacent to north and southbound Route 18. More people who live in the study area would walk to the Post Office if there were sidewalks and safe crossings.

II. INTERSECTION ANALYSIS

Figure 15, page 12-A, shows the 17 key intersections in the Route 18, Old Bridge study area.

Areas targeted for improvements include:

- At grade intersections
- Overpasses
- Underpasses
- Bus stops
- Bicycle routes
- Land use connections

Recommended improvements include enhanced crosswalks, ramp treatments, pedestrian signals, and enhanced crosswalks.

Enhanced Crosswalks

The crosswalk should be designed for maximum pedestrian safety.

- It should be highly visible to motorists and pedestrians
- It should contrast with the pavement, e.g., high contrast “zebra” striping
- There should be a pedestrian refuge island, with a textured, colored platform between the north and southbound lanes
- Signs alerting motorists of pedestrian crossings

Figure 16, page 12-B, is an example of a typical crosswalk and refuge island treatment.

Pedestrian Signals

Installation of a crossing countdown at the signal will tell the pedestrian how much time he or she has to cross the highway. The signal starts at 30 seconds and counts down to zero. Other signal improvements include “walk,” “don’t walk” symbols.

Appendix 6 contains a detailed description of the traffic signal timings at the following key intersections on Route 18 in Old Bridge:

Route 18 and Maple Street
Route 18 and Southwood Drive
Route 18 and Ferry Road
Route 18 and Foxborough Drive – Marlboro Road

FIGURE 15
 STUDY AREA INTERSECTIONS
 NJ 18 CORRIDOR
 OLD BRIDGE TOWNSHIP

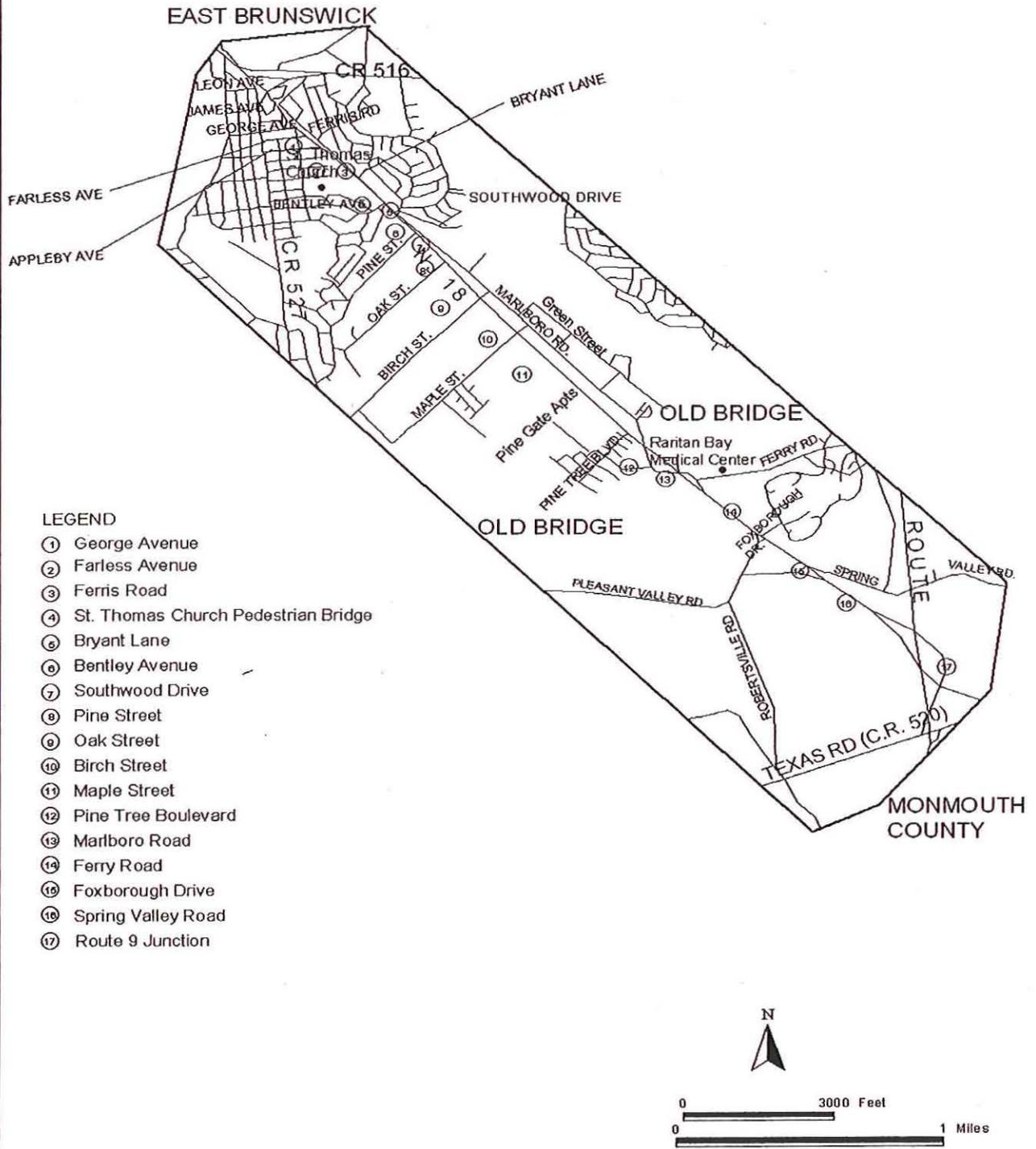
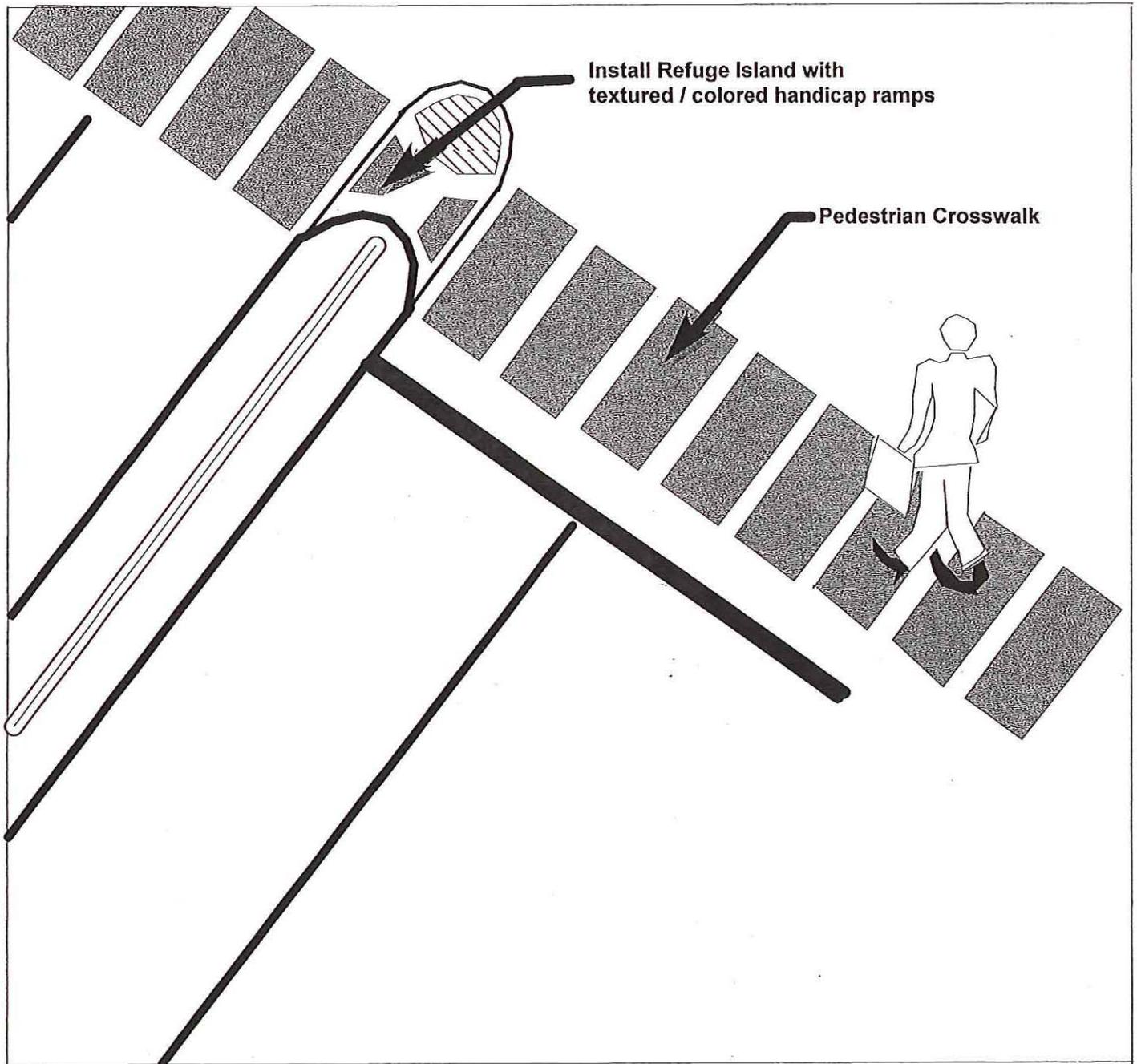


Figure 16

TYPICAL CROSSWALK and REFUGE ISLAND TREATMENTS



Source: Route One Corridor Bicycle & Pedestrian Case Study Mercer and Middlesex Counties, New Jersey; Prepared for New Jersey Department of Transportation; Prepared by the RBA Group Greenways Incorporated Bicycle Federation of America, December 1997. Redrawn by the Middlesex County Planning Department, August, 2007

Ramp Treatments

To enhance ramps for maximum pedestrian safety:

- Install an enhanced crosswalk, with curb cuts, at the ramp
- Install a sign telling motorists that pedestrians are crossing at the ramp

Figure 16-A, page 13-A, shows typical ramp treatments.

Other recommended improvements include

- Curb ramps
- Sidewalks
- Pedestrian signs
- Striping
- Enhanced lighting

Table 2, page 13-B, shows New Jersey Department of Transportation cost estimates for bicycle and pedestrian improvements.

Bus stop signs and shelters that are damaged or are in disrepair should be replaced. This should be done by contacting:

NJTRANSIT Bus Stop Sign and Shelter Programs

One Penn Plaza East

Newark, NJ 07105-2246

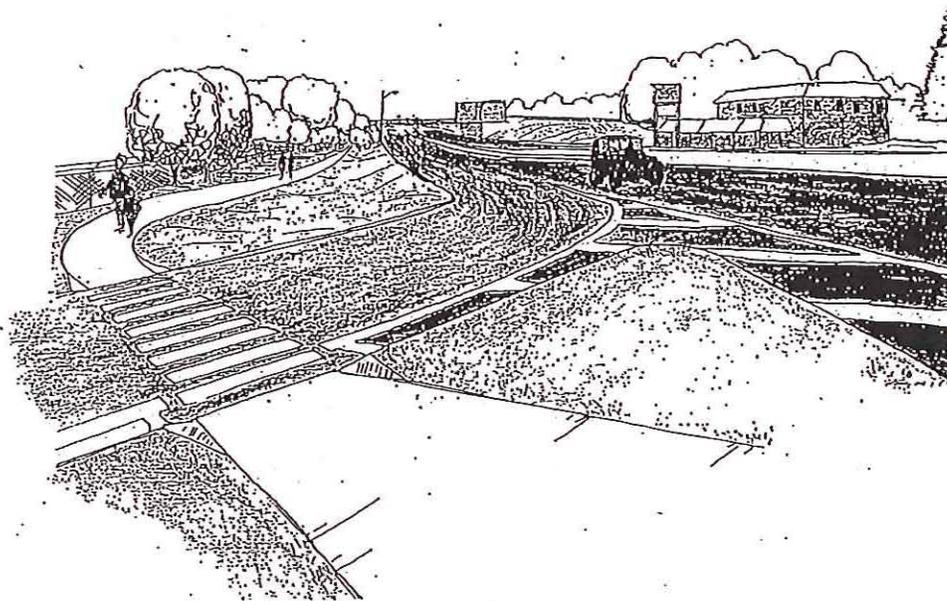
(973) 491-7783 (Telephone)

(973) 491-8454 (Fax)

The next section of the Route 18 Pedestrian Transit Study consists of a description of each key intersection, followed by proposed improvements that would make the crossing safe for pedestrians and bicyclists. These intersections are:

- Route 18 and County Routes 516/527 Interchange
- Bentley Avenue/Southwood Drive
- Pedestrian Overpass at St. Thomas the Apostle Church and School
- Pine Street
- Birch Street
- Oak Street
- Maple Street
- Median break between Maple Street and Pine Tree Boulevard
- Pine Tree Boulevard
- Ferry Road
- Foxborough Drive/Marlboro Road
- Spring Valley Road
- Texas Road/Routes 9 and 18 Junction

Figure 16-A
Typical Ramp Treatments



Source: Route One Corridor Bicycle & Pedestrian Case Study Mercer and Middlesex Counties, New Jersey, Prepared for New Jersey Department of Transportation, Prepared by the RBA Group Greenways Incorporated Bicycle Federation of America December, 1997

TABLE 2
Bicycle and Pedestrian Corridor Case Study

Cost Estimates
 (Typical Target Areas)

At-Grade Intersection Improvements (typical)

<u>Item</u>	<u>Quantities Unit</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Enhanced crosswalks	4 EA	\$200.00	\$800.00
Ped signals	8 EA	1,000.00	8,000.00
Ped signing	4 EA	250.00	1,000.00
Median treatments w/barrier	LS		42,000.00
Sidewalks	400 LF	18.00	7,200.00
Curb ramps	4 EA	350.00	1,400.00
		TOTAL	\$60,400.00

Overpasses (typical)

Sidewalks	2,000 LF	\$18.00	\$36,000.00
Bike lane striping	2,000 FT	.50	1,000.00
Bike lane signing	8 EA	250.00	2,000.00
Curb ramps	8 EA	350.00	2,800.00
Enhanced crosswalks	4 EA	150.00	600.00
		TOTAL	\$42,400.00

Underpasses (typical)

Sidewalks	2,000 LF	\$18.00	\$36,000.00
Curb ramps	8 EA	350.00	2,800.00
Highway Lighting	LS		55,000.00
Enhanced crosswalks	4 EA	200.00	800.00
Bike striping	2,000 FT	.50	1,000.00
Bike signing	4 EA	250.00	1,000.00
		TOTAL	\$95,945.00

Source: Route One Corridor Bicycle & Pedestrian Case Study
 Mercer and Middlesex Counties, New Jersey, Prepared for
 New Jersey Department of Transportation, Prepared by the
 RBA Group Greenways Incorporated Bicycle Federation of
 America, December, 1997

Route 18 and Middlesex County Routes 516/527 Interchange

Figure 17, page 14-A, is an aerial map, and Figure 18, page 14-B, is a photograph of the Route 18 and Middlesex County Routes 516/527 Interchange in Old Bridge, just south of the East Brunswick border. NJDOT proposes to reconstruct the interchange by realigning Route 18 and County Routes 516 and 527, replacing the existing bridge over Route 18 and widening Route 18 to provide an inside shoulder. Other proposed improvements include a new ramp from Route 18 northbound to CR 516/527 eastbound and westbound via a new signalized intersection. The signalized intersection of CR 517 and Old Matawan Road will be relocated and coordinated with a new signal at the ramp from Route 18. Improvements for the NJ 18 and County Routes 516 and 527 interchange are:

- Ramp treatment at Ramp D.
- Install new sidewalk on the eastbound side of Route 516 from Marlboro Road to the cutoff into Marsad Drive.
- Install crosswalk across Route 516, connecting to the proposed sidewalk on the westbound side of the overpass and to Ramp E and the Marlboro Road roadway.
- Install sidewalks on both sides of Route 18, south of the interchange to the southern project limits.

The County and Township are working with NJDOT and NJTPA on this project, which is to be pedestrian and bicycle compatible. The FY 2005-2007 Transportation Improvement Program (TIP) shows construction of this project starting in 2007. NJDOT has completed the preliminary design work for this project. Final design is scheduled to begin in June, 2007. NJDOT anticipates Right of way acquisition to be completed in January, 2008, and the contract for construction to be awarded in the Spring of 2008.

The NJDOT project manager and consultant for the interchange improvements gave a presentation to the Middlesex County Transportation Coordinating Committee (TCC) on June 27, 2007. Appendix 7, entitled "Route 18, County Route 516 Interchange," contains maps and photographs used during the presentation to depict the proposed improvements.

The project has eliminated the construction of noise walls and eliminates three bus stops. The bus stop just before the underpass, as shown on Figure 17, will be eliminated. We recommend creating new bus stops and shelters at alternate locations to provide safe and convenient access for bus passengers. One such location is the pedestrian overpass at St. Thomas the Apostle Church and School, shown on Figure 19, page 14-C. The opportunity for a safe crossing at the pedestrian overpass for bus patrons is compelling. Use of the overpass reduces the pedestrian's need to walk along the highway and eliminates the attempt by pedestrians to cross the expressway portion of Route 18 at the redesigned interchange. Details and specific recommendations to improve pedestrian safety at the Southwood Drive/St. Thomas the Apostle Church and school crossing are on pages 15 and 16.

Figure 20, page 14-D, is an aerial view of Route 18, George and Farless Avenues and Ferris Street, and Figures 21-24, pages 14-E – 14-H, are photographs showing existing bus stops at these locations. NJDOT proposes to eliminate the bus stop at the far side of George Avenue and near side of Farless Avenue.

Figure 17
Matawan Rd. (Route 516)
Old Bridge Township, NJ



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0 100 200 400 Feet

Color Infrared Aerials Flown April 2002

carolismatz@mid

Figure 18



Route 18/Middlesex County Routes 516/527
Interchange – Old Bridge Township

Figure 19
Pedestrian Crossing
Old Bridge Township, NJ



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Division of Environment, Parks & Comprehensive Planning
April 2007

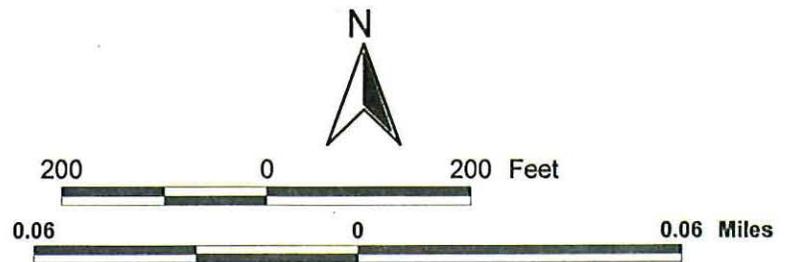
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Color Infrared Aerials Flown April 2002

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Figure 20
George Ave, Farless Ave. and Ferris Rd
Old Bridge Twp.



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Color Infrared Aerials Flown April 2002

Figure 21



Route 18 southbound –far side bus stop –
George Avenue – Old Bridge Township

Figure 22



Route 18 southbound – bus stop far side
George Avenue – Old Bridge Township

Figure 23



Route 18 southbound – near side bus stop at
Farless Street – Old Bridge Township

Figure 24



Route 18 southbound – near side bus
stop at Farless Street – Old Bridge
Township

We recommend moving the stop to the nearside of the St. Thomas Church driveway beyond the end of the noise wall, or relocating the stop to the near side of the pedestrian overpass. We also recommend locating the southbound bus stop to the far side of the overpass at St. Thomas Church. There are important safety reasons for giving bus patrons access to the pedestrian overpass. Bus service requires safe pedestrian treatments on Route 18 in Old Bridge. Crossing the highway in this area without the pedestrian overpass sets up a dangerous "dart and dash" crossing for pedestrians where no traffic lights exist. Eliminating the bus stops and relocating them at the pedestrian overpass is a counter measure to solve the safety problem of "dart and dash" crossings. for bus patrons.

Bentley Avenue and Southwood Drive

Figure 25, page 15-A, is an aerial view of Route 18 and Bentley Avenue, and Figure 26, page 15-B, is a photograph of Route 18 southbound, opposite Southwood Drive. Two bus stops, one at Southwood Drive and Route 18 northbound and the other on Route 18 southbound between Southwood Drive near side at Bentley Avenue far side should remain. Recommendations at this location are an enhanced intersection treatment, including a highly visible cross walk, and a pedestrian countdown on the traffic signal to clarify the pedestrian crossing location and the time available to cross. The improvements are safety measures to assist bus patrons and other pedestrians crossing Route 18.

Pedestrian Overpass

Pedestrians in the Southwood section of Old Bridge are linked to Ward Six across Route 18 by the aforementioned pedestrian overpass at St. Thomas the Apostle Church. The overpass is shown in Figures 27 and 28, pages 15-C and 15-D. There is a sidewalk that runs from the bottom of the pedestrian overpass ramp to parking lot and access road to St. Thomas Church. There are pedestrian crossings at two grade separated interchanges on Route 18 north of the pedestrian overpass. One, at the Old Bridge-East Brunswick border at Main Street, which is an underpass, and the other at the CR516/527 overpass.

The traffic signal at Southwood Drive is an at grade pedestrian crossing and is three miles to the south of the pedestrian overpass. There are three bus stops at Southwood Drive, near side southbound and both near side and far side northbound. There is one additional bus stop northbound serving the Southwood section of Old Bridge on the far side of Ferris Road on Route 18. The near side bus stops at Southwood Drive serve the New York buses and the far side northbound sheltered bus stop serves the local NJ Transit 818 bus, which picks up passengers in the Southwood housing development going toward New Brunswick before reaching the far side of the Southwood Drive stop on Route 18.

New bus stops on southbound Route 18 are needed to assure the safety of pedestrians in the 1.6 miles between the newly designed overpass and the Southwood Drive traffic signal. It is recommended that NJ Transit study the feasibility of southbound buses exiting Route at the new County Route 527 ramp discharging passengers at a bus pull off and returning to Route 18 on the new southbound ramp, to assure the safety of pedestrians in this 1.6 mile distance between the newly designed overpass and the Southwood Drive traffic signal light.

**Figure 25
Bentley Avenue.
Old Bridge Twp.**



0 0.025 0.05 0.1 Miles



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bentleyave.mxd

Figure 26



Route 18 southbound far side – Bentley Avenue
opposite Southwood Drive – Old Bridge Township

Figure 27



Route 18 – pedestrian overpass from St. Thomas the
Apostle Church parking lot – Old Bridge Township

Figure 28



Route 18 – pedestrian overpass from St. Thomas the
Apostle Church parking lot – Old Bridge Township

It should be noted that the overpass is not covered, which inhibits bicycle and pedestrian access during inclement weather. Also, the overpass, which has stairs, does not conform to ADA requirements. Long term improvements recommended for the overpass include installing a canopy, providing, enhanced lighting, and bringing the overpass into compliance with ADA requirements.

Pine Street

Figure 29, page 16-A, is an aerial view of Route 18 and Pine Street. Figure 30 and 31, pages 16-B and 16-C, show the near side bus stop at southbound Route 18 and Pine Street, and the bus stop opposite Pine Street on northbound Route 18. These bus stops should remain. The eight foot high chain link fence in the Route 18 median at the Pine Street location prevents pedestrians from crossing the highway. Eliminating mid-block crossings between the traffic signals greatly enhances pedestrian safety.

Birch Street

There are near side bus stops at Birch Street on north and southbound Route 18, shown on Figures 32 and 33, pages 16-D and 16-E. A major safety hazard exists at this location because there is no chain link fence to prevent bus passengers from crossing the highway. Continuing the chain link fence and removing the bus stops seems to be the logical solution to assure pedestrian safety at this location. Passengers could use the nearest bus stops, located on north and southbound Route 18 and Maple Street; however, these stops are more than a mile from Birch Street, too long a distance to walk, particularly in inclement weather, and, there are no sidewalks on Route 18. One possible solution worth considering is creating a "kiss and ride," bus stop in the WAWA service station area, where Birch Street area bus patrons would be dropped off.

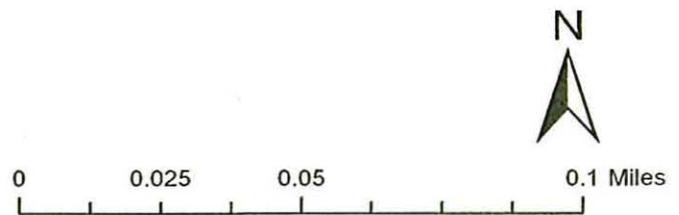
Oak Street

Oak Street has no bus stops or pedestrian facilities, as shown on Figure 34, page 16-F. The chain link fence in the Route 18 median should be extended to prevent pedestrians crossing the highway at this location.

Maple Street

Figure 35, page 16-G, is an aerial view of the Maple Street and Route 18 signalized intersection. There is a service station and a WAWA convenience store on the south side of Maple Street and Route 18 southbound, with access driveways on Route 18 and on Maple Street. There are left turn slot lanes, which allow-turns on north and southbound Route 18. Old Bridge Police have identified this as a serious safety hazard that must be addressed immediately. They recommend substantially lengthening the left turn slot lane northbound to provide sufficient capacity for left turning vehicles, which currently stack into the fast lane on Route 18 northbound.

Figure 29
Pine Street
Old Bridge Twp.



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Figure 30



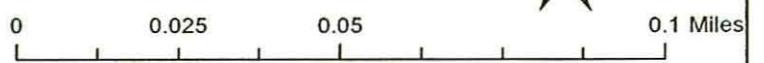
Route 18 southbound near side Pine Street at
Suburban Caps – Old Bridge Township

Figure 31



Route 18 northbound – bus stop opposite
Pine Street – Old Bridge Township

Figure 32
Birch Street
Old Bridge Twp.



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May 2007

Birch.mxd

Figure 33



Route 18 northbound – near side bus stop
Birch Street – Old Bridge Township

Figure 34
Oak Street
Old Bridge Twp.



0 0.06 0.12 Miles



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Figure 35
Maple Street
Old Bridge Twp.



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Color Infrared Aerials Flown April 2002

There are nearside bus stop northbound and southbound at Maple Street, shown on Figures 36 and 37, pages 17-A and 17-B. Recommendations to assure pedestrian safety at this location are an enhanced intersection treatment, including a highly visible crosswalk, and a pedestrian countdown on the traffic signal.

Median Break U-turn between Maple Street and Pine Tree Boulevard

NJDOT and Old Bridge Township have proposed closing the U-turn median break on Route 18 between Maple Street and Pine Tree Boulevard. The stacking lane on northbound Route 18 would be extended and left turns at Maple Street will facilitate the movement to compensate for the closing.

Pine Tree Boulevard

Figure 38, page 17-C, is an aerial view of Pine Tree Boulevard, a right-in, right-out roadway that provides access to the Pine Tree Apartments, situated on southbound Route 18. The bus route serving this location operates between 6 and 8 a.m. There is a near side bus stop on southbound Route 18, and a bus shelter on northbound Route 18 on the far side of Marlboro Road, mid-block, opposite Pine Tree Boulevard, shown on Figures 39 and 40, pages 17-D and 17-E. Bus patrons who live in the Pine Tree Apartments must cross the median to reach the bus shelter on northbound Route 18. This creates a hazardous “dart/dash” situation. Bus patrons wait for gaps in traffic between the Ferry Road traffic signal to the south and the Maple Street signal to the north. NJDOT should consider installing a barrier fence to keep pedestrians from crossing the median, and NJ Transit should consider creating a “kiss and ride” bus stop in the WAWA service area, where Pine Tree Apartment bus patrons would be dropped off, as recommended for Birch Street and Route 18. It may be necessary to remove the bus shelter on northbound Route 18, as it is used primarily by Pine Tree Apartments residents.

Ferry Road

Figure 41, page 17-F, is an aerial view of Ferry Road and Route 18, a signalized intersection that connects Route 18 northbound to Route 9, and provides access to Raritan Bay Medical Center, shown on Figure 42, page 17-G. NJDOT proposes improvements to this intersection. Design for the project is complete and it is anticipated that construction will begin in April, 2007. The proposed improvements include 400 foot double left stacking lanes that will accommodate 40 cars and allow for left turns from Route 18 southbound into Ferry Road. The re-striping will allow the double left turns and facilitate left turns into the hospital. U-turns will be permitted, and left turns out of Ferry Road. Onto Route 18 southbound will be accommodated.

Pedestrian countdown signal heads exist at the Ferry Road/Route 18 intersection, shown on Figures 43-45, pages 17-H – 17-J. There is a bus stop on Route 18 southbound across from Ferry Road, shown on Figure 46, page 17-K. Improvements are needed to assure safe pedestrian access at this location. We recommend a highly visible striped pedestrian crosswalk and refuge island on Route 18. Sidewalk should be installed from Route 18 to the hospital on Ferry Road.

Figure 36



Route 18 southbound near side – Maple Street – Old Bridge Township

Figure 37



Route 18 northbound – near side bus stop
Maple Street – Old Bridge Township

Figure 38
Pine Tree Boulevard
Old Bridge Twp.



0 0.06 0.12 Miles



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Figure 39



Route 18 southbound near side bus stop
Pine Tree Boulevard – Old Bridge Township

Figure 40



Route 18 southbound near side bus stop
Pine Tree Boulevard – Old Bridge Township

Figure 41
Ferry Rd.
Old Bridge Twp.



0 0.025 0.05 0.1 Miles



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Division of Environment, Parks & Comprehensive Planning
May 2007

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Figure 42



Raritan Bay Medical Center – Route 18 northbound at
Ferry Road – Old Bridge Township

Figure 43



Raritan Bay Medical Center – Route 18 northbound at
Ferry Road – pedestrian activated traffic signal
Old Bridge Township

Figure 44



Route 18 southbound – Ferry Road
pedestrian crossing – Old Bridge Township

Figure 45



Route 18 southbound – Ferry Road
pedestrian activated traffic signal – Old
Bridge Township

Figure 46



Bus stop – Route 18 southbound across from
Ferry Road – Old Bridge Township

17-K

Foxborough Drive / Marlboro Road

Figure 47, page 18-A, is an aerial view of the Foxborough Drive/Marlboro Road intersection. This is the first signalized intersection in Old Bridge north of Route 9. Route 18 is a limited access freeway south of Route 9 in Monmouth County. It is a land service roadway with at grade signals and cross streets north of Route 9 in Middlesex County. The Old Bridge Police Department proposes installing high intensity strobe lights in the amber (yellow) signal to alert motorists that Route 18 roadway changes from a freeway. It is clear that drivers must be made aware of the Foxborough Drive/Marlboro Road signal. Signage with flashers and "Traffic Signals Ahead" signs are recommended.

There is no bus service or stop at this intersection. Also, the signal is not pedestrian activated. Pedestrians can cross Route 18 during the regular signal cycle. High visibility crosswalks should be installed, as nearby facilities develop that could generate pedestrian traffic.

Spring Valley Road

Figure 48, page 18-B, is an aerial view of The Route 18 and Spring Valley Road. This is the first at grade intersection north of R 9, where Route 18 changes from a limited access freeway, to a land service highway. The intersection is not signalized, and there are no bus stops. Old Bridge police have recommended closing the median and limiting access to right in and right out only. The Legends Golf facility on southbound Route 18 is accessible from the north via Spring Valley Road to Marlboro Road and Foxborough Drive. No pedestrian improvements are recommended at this time; however, pedestrian facilities may be warranted should the Legends Golf facility be developed for commercial or residential use.

Texas Road - Routes 9 / 18 Junction

Figure 49, page 18-C, is an aerial view of Texas Road/Routes 9 and 18. Texas Road is the bus access point for the Routes 9 and 18. junction. There are far side bus stops and a southbound bus pull-off at Rt. 9 and Texas Road. There are crosswalks and "Walk / Don't Walk" signal heads. Part Two of this study explores the feasibility of a bus park and ride facility at this location.

Figure 47
Foxborough Drive
Old Bridge Twp.



Figure 48
Spring Valley Road
Old Bridge Twp.

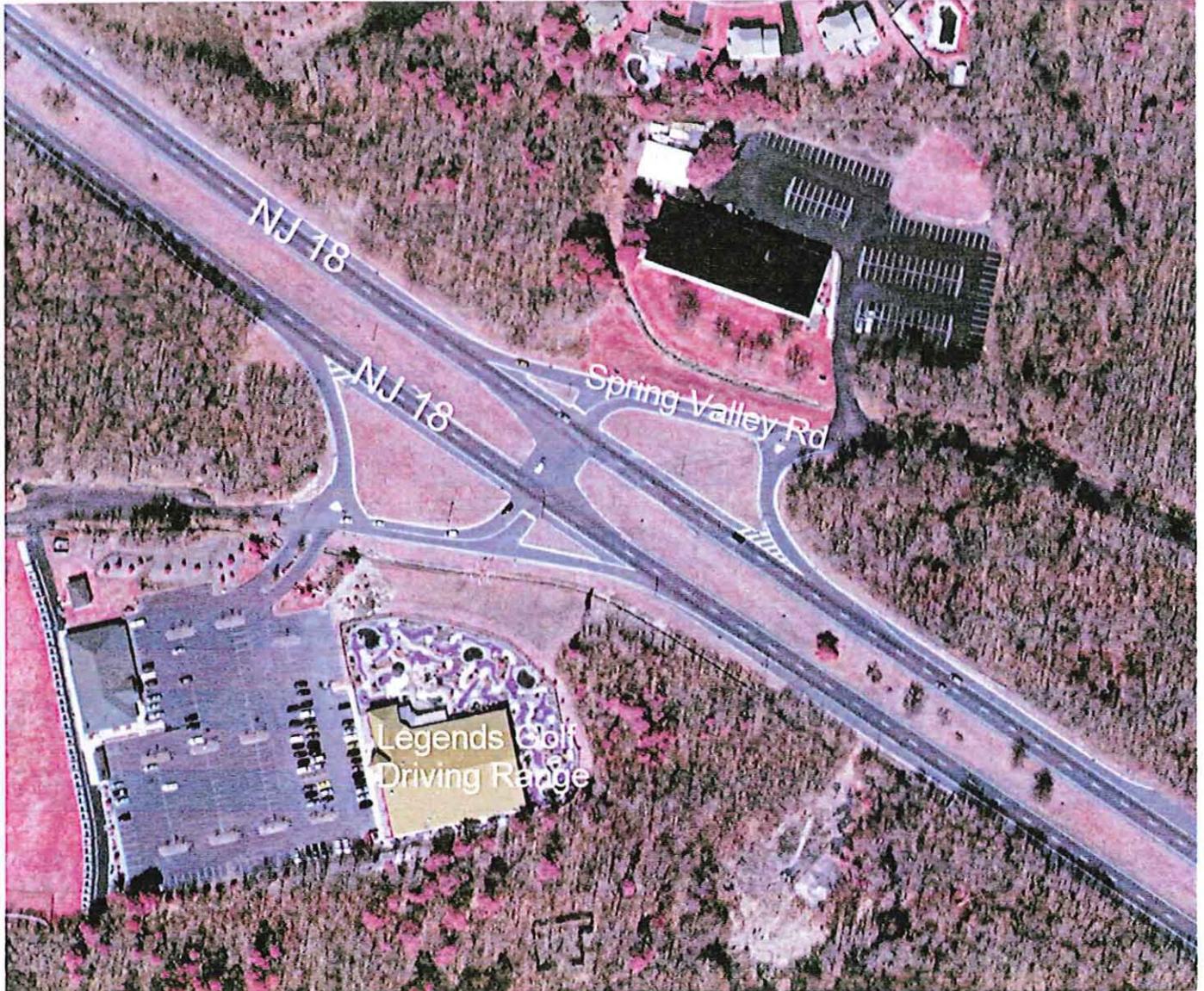


Figure 49
Route 9 Junction
Old Bridge Twp.



0 0.05 0.1 0.2 Miles



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III. BICYCLE, PEDESTRIAN AND TRANSIT IMPROVEMENTS ALONG THE ENTIRE ROUTE 18 CORRIDOR IN OLD BRIDGE

Bicycle and Pedestrian Safety Improvements

The entire NJ 18 corridor in Old Bridge needs to be more pedestrian and bicycle friendly, a goal that can be reached by providing better transit service and access to transit, infrastructure improvements, bicycle and pedestrian facilities Recommended improvements include the following:

- Construct a multi-use path on north and southbound Route 18 from the Routes 516/527 Interchange to the Route 9 Junction, with improved access at all intersections along the highway. There is sufficient right of way on both sides of Route 18 for this facility. The path would provide access to bus transit along Route 18 and to the park and ride and shuttle bus service proposed in Section Two of this report. The path would provide cyclists with access to the municipal complex, town center, and commercial facilities on County Route 516. This facility would also serve as a link to municipal bicycle trails in Old Bridge, as well as the Henry Hudson Trail in nearby Monmouth County.
- Install sidewalks along the stretch of north and southbound Route 18 where bus stops exist to enhance safety for bus passengers and other pedestrians. Providing sidewalks and other amenities could induce more people living in developments on or adjacent to Route 18 to use public transit. Sidewalks along the entire Route 18 corridor, particularly south of Ferry Road, in Old Bridge would not be feasible at this point in time, as most of this frontage is not developed.
- Provide pedestrian amenities such as all weather shelters, lighting and other safety measures at all bus stops along Route 18.
- Designate the NJ 18 in Old Bridge as a "Safe Corridor." Fines for traffic violations in areas designated as safe corridors are double if the driver is convicted. There are 18 safe corridor sections in New Jersey. A similar safe corridor program in California resulted in 11- 37 percent crash rate reductions, according to NJDOT.

Transit Improvements

- Create a park and ride facility and shuttle service from the Route 9 area to New Brunswick. This recommendation is presented in detail in Section Two of this study.
- Consider extending the proposed light rail or bus rapid transit (BRT) system that would connect residential and employment centers in New Brunswick, Edison and Piscataway to East Brunswick and Old Bridge. This is a long range recommendation.
- Provide more frequent, on time service, and on time transfers on local bus routes, such as the NJ Transit 811, 815, and 818 routes, and the MCDOT routes.
- Extend lines to cover gaps in service.
- Reduce travel time.
- Coordinate transit services among the different carriers, facilitating transfers among transit providers and creating intercepts.
- Provide additional official park and ride facilities.
- Relocate bus stops away from the NJ 18 travel lanes, where possible.
- Invest in newer and better equipment.
- Invest in infrastructure improvements, such as bus shelters, bus stop signage and markings, priority traffic signals, bus pull-offs, and bicycle lockers or other secure bicycle storage facilities.
- Provide information and schedules at bus stops and transfer points.
- Increase the linkage between regional and local bus routes.