



New Jersey's Long-Range Transportation Plan

For Public Discussion
September 2008

URBAN SUPPLEMENT REPORT

City of Elizabeth

Prepared for
**NEW JERSEY DEPARTMENT
OF TRANSPORTATION and
NJ TRANSIT**

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The preparation of this report has been financed in part by the US Department of Transportation, Federal Highway Administration and Federal Transit Administration. This document is disseminated under the sponsorship of the US Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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INTRODUCTION

State law requires the New Jersey Department of Transportation (NJDOT), in conjunction with NJ TRANSIT, to prepare and submit to the legislature an Urban Transportation Supplement to the state's Long-Range Transportation Plan. The state requires that the Urban Supplement identify and address the transportation needs of the state's seven largest cities: Atlantic City, Camden, Elizabeth, Jersey City, Newark, Paterson, and Trenton. Because the State Development and Redevelopment Plan (State Plan) recognizes New Brunswick as an eighth urban center, an Urban Supplement has also been prepared for that city. The Urban Supplement must outline means of improving access to these major urban centers, emphasizing the transportation needs of city residents who are employed or seeking employment in suburban locations.

The State Plan recognizes the importance of cities to future development in the state, and it proposes to target infrastructure investments to urban areas to support urban development and redevelopment. In recent years, cities have begun to experience modest to substantial gains in new development, and projections and plans indicate that urban development is likely to continue.

The transportation needs of the major cities can be summarized follows:

- ◆ Diverse populations, including low-income, minority, and elderly citizens, many of whom depend on public transportation.
- ◆ A need to serve both increasing development and redevelopment.
- ◆ An aging infrastructure that must be maintained and rehabilitated.
- ◆ A mismatch between the locations of housing and jobs.

This Urban Supplement for the City of Elizabeth updates previous reports from 1993 and 2001. NJDOT intends for this document to be a user-friendly guide to inform its planning and capital programming processes, and those of the counties and municipalities involved, particularly to support local economic development and land use objectives.

This report provides background data on transportation and demographic conditions, and it assesses transportation system issues and needs, especially in terms of meeting existing demands and accommodating new development and redevelopment. The report also identifies current and proposed transportation investments and their status, and it proposes means of advancing key projects.

The study process involved interviews with representatives of several agencies including NJDOT Local Aid, NJ TRANSIT, the North Jersey Transportation Planning Authority (NJTPA), the city's Department of Planning and Community Development, the Union County Department of Economic Development, the county Division of Planning and Community Development, and the county Division of Transportation Planning and Land Use Planning.

The process also involved reviewing reports, information, and data from several agencies, including the US Census, NJ Department of Labor, NJDOT, NJ TRANSIT, NJTPA, and the Port Authority of New York and New Jersey. Key local planning documents reviewed include the City of Elizabeth's Master Plan, the city's Cross-acceptance Report, the Union County Comprehensive Economic Development Strategy (CEDS), and the Port Authority's

I. TRANSPORTATION AND DEMOGRAPHIC CONDITIONS

A. EXISTING TRANSPORTATION NETWORK

1. Roads

Regional/State Roads

The major regional/state roads serving the Elizabeth area are the New Jersey Turnpike, I-278, US 1&9, Route 27, Route 28, Route 81, and Route 439 (see Map 1). The following is a brief summary of the key roads that run through or near the city.

- ◆ The New Jersey Turnpike (I-95) runs north-south through the eastern part of the city, with access points at Interchanges 13 and 13A.
- ◆ I-278 runs east-west through the southern end of Elizabeth. It links US Route 1&9 to the New Jersey Turnpike before crossing the Goethals Bridge. The section of this road in Elizabeth is under the jurisdiction of the Port Authority of New York & New Jersey.
- ◆ US Route 1&9, a major north-south artery, bisects the city. It links Elizabeth to Newark and Jersey City to the north, and to Linden, Rahway and other points to the south.
- ◆ Route 27 runs for about 3.5 miles through the city. It links the city to Newark to the north and to Roselle, Linden, and Rahway, and other points to the south.
- ◆ Route 28 is an east-west arterial that runs 1.4 miles in the city between Route 27 and Roselle Park. It connects the city with Westfield, Plainfield, and other points west.
- ◆ Route 81 is a short segment (1.2 miles) linking the New Jersey Turnpike to US Route 1&9 just south of the Newark Liberty International Airport.
- ◆ Route 439 (Bay Way, Elmora Avenue, or North Avenue) serves as a loop around the western part of the city. It runs for about four miles between Turnpike Exit 13 and Route 27.

County Roads

The local roadway network includes several roads under county jurisdiction, including the following: Route 514/656 (Lidgerwood Avenue/Linden Avenue), Route 610 (West Grand Avenue), Route 612 (Jersey Avenue), Route 614 (Pearl Street), Route 616 (Gallop Hill Road), Route 618 (Orchard Street and Magie Avenue), Route 623 (Broad Street), Route 624 (North Avenue), and Route 629 (Morris Avenue).

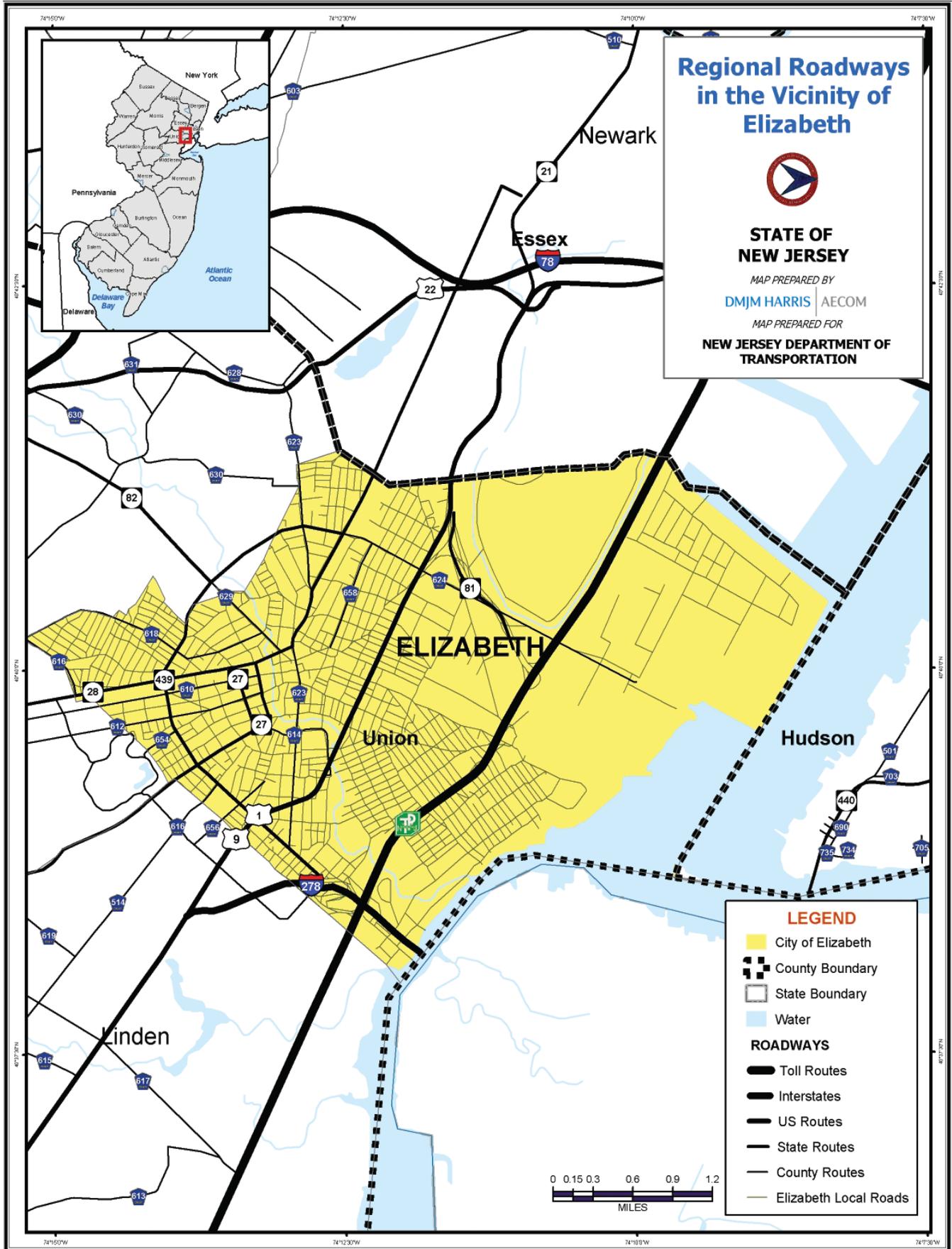
Municipal Streets

Major municipal streets include portions of Grand Street, Jersey Avenue, Elizabeth Avenue, and Bay Way.

Bridges

The city has many bridges crossing the Elizabeth River and rail lines. The largest are the US 1&9 Elizabeth River Viaduct and the NJ Turnpike Bridge, as well as the Goethals Bridge, which crosses Arthur Kill between Elizabeth and Staten Island. Smaller bridges that cross the Elizabeth River include North Avenue, Trotters Lane, Orchard Street, Morris Avenue, Westfield Avenue, Grand Street, Jersey Street, Murray Street, Rahway Avenue, Broad Street, Bridge Street, South Street, Summer Street, Trenton Avenue, South First Street, and Front Street.

Map 1: Road Network



2. Public Transit

Rail Service

Two NJ TRANSIT commuter rail lines, the Northeast Corridor (NEC) and the North Jersey Coast Line (NJCL), serve Elizabeth with two stations. The Elizabeth Station is located in midtown near the “Arch,” a three-tiered stone bridge that carries the NEC and NJCL over the old Central Railroad of New Jersey right-of-way, which runs over Broad Street. Extensive renovations to the station were completed in 2004, and in 2007, the station area received state Transit Village designation. Three main parking areas are located near the Elizabeth Station: a private deck with nearly 600 spaces, a parking authority lot with 229 spaces, and a lot owned by the Elizabeth Development Company, having 75 spaces. Near the North Elizabeth Station, which receives limited weekday service, are two private lots with 68 and 58 spaces, respectively.

The Northeast Corridor line provides local service between Elizabeth and New York City to the north and Trenton to the south. Other important stops on this line are Princeton Junction, New Brunswick, Metropark, Newark Liberty International Airport, and Newark Penn Station. The North Jersey Coast Line connects Jersey shore communities such as Bay Head, Asbury Park, and Red Bank with points north to New York City.

Although the Raritan Valley Line does not serve Elizabeth directly, the new Union Station is located along Green Lane near Morris Avenue just north of the city border. Through this connection, the line provides service between Elizabeth and points west including Westfield, Plainfield, and Somerville.

Regional and Local Bus Service

Four NJ TRANSIT bus lines (111, 112, 113, and 115) connect Elizabeth with the Port Authority Bus Terminal in New York City. The NJ TRANSIT local bus routes currently serving the city are the 26, 40, 52, 56, 57, 58, 59, and 62 (see Map 2). Total weekday ridership on all routes for which NJ TRANSIT maintains data is about 24,000. In addition, Coach USA operates the 24 ONE bus route, which serves Elizabeth and Newark and is one of the most heavily-used bus routes in the state.

Other Services

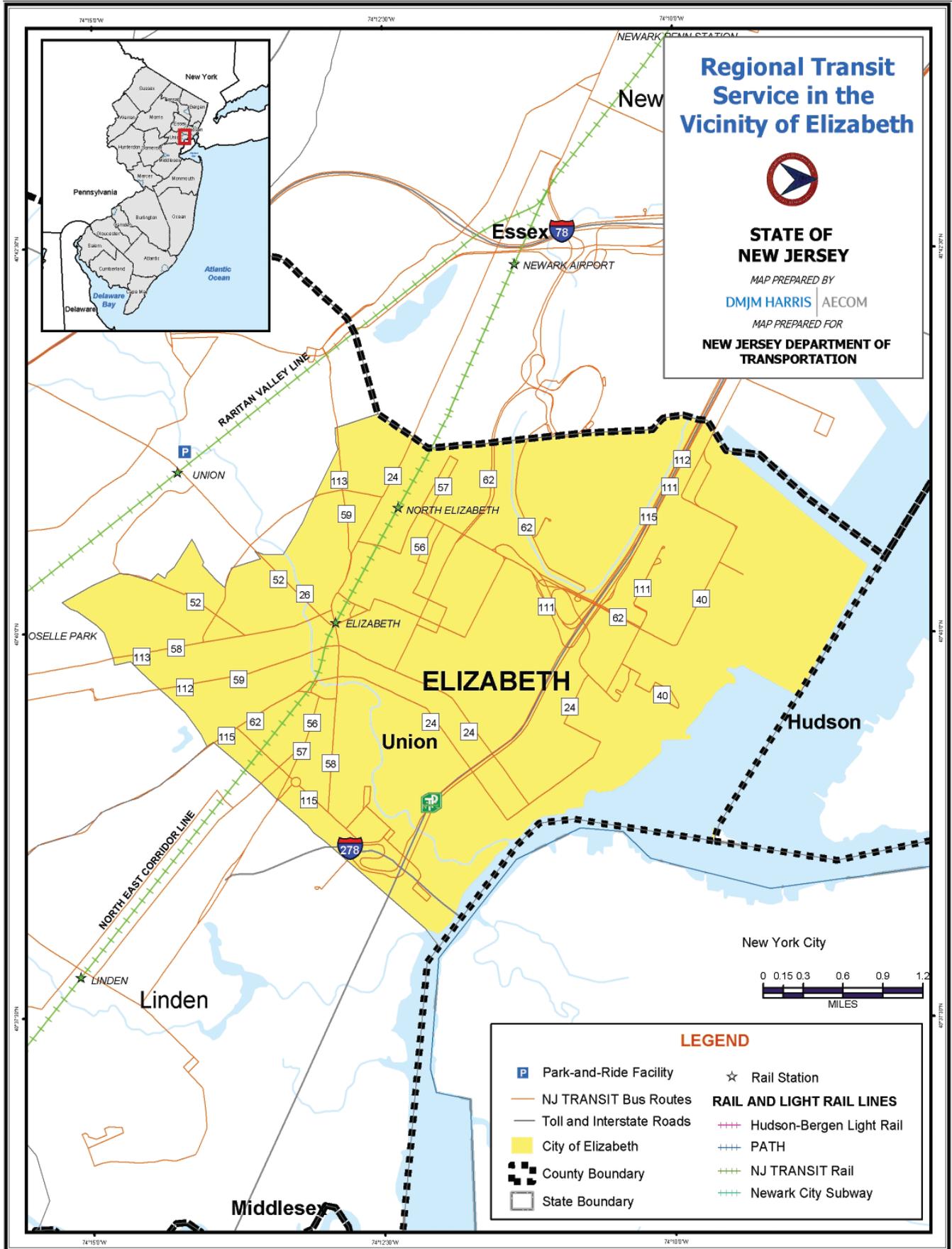
Other transit options for city residents include the following:

- ◆ NJ TRANSIT’s Access Link program provides paratransit service comparable to local bus service to persons with disabilities. The origin and destination of each trip must be within $\frac{3}{4}$ mile of a local bus route.
- ◆ Union County Paratransit provides service to elderly persons, persons with disabilities, and low income persons during weekdays and Saturdays.

Airport

The Newark Liberty International Airport (EWR) occupies over 2,000 acres, mostly in Newark with the rest in Elizabeth. The airport has two main runways and three passenger terminals, and about 50 scheduled airlines operate out of it. In 2005, EWR handled 33 million passengers, of which Continental Airlines carried over 50%. The top US city trip pairs are Chicago, Atlanta, Los Angeles, and Orlando.

Map 2: Transit Network



3. Bicycle and Pedestrian Facilities

The city has no designated on-road or off-road bicycle facilities. The county's Elizabeth River Park currently extends from Hillside and Union into a small piece of the northern area of the city. The city has two other county parks: Mattano Park and Warinaco Park.

4. Goods Movement

Port Newark/Elizabeth

Port Newark and the Elizabeth Port Authority Marine Terminal operate as an integrated marine terminal, forming the largest and most comprehensive collection of maritime cargo handling facilities on the East Coast of North America. The entire complex is part of Foreign Trade Zone No. 49, operated by the Port Authority of New York & New Jersey. The Port Authority recently completed reconfiguring the port. The facility encompasses a full range of maritime commerce activities: major container handling terminals, automobile processing and storage facilities, liquid and solid bulk terminals, breakbulk facilities, warehousing and distribution buildings, trucking firms, and an on-dock rail terminal. Freight volumes have been increasing significantly over the last few years. In 2001, the Port handled over 2 million marine containers. There were an average of 882 daily one-way truck trips, and an average of 338 intermodal rail trips.

Rail Freight Service

Rail service to and from the port includes more than one dozen terminals served by railroads including Canadian Pacific Railway, CSX, and Norfolk Southern. The Chemical Coast Line, part of Conrail Shared Assets, runs north-south through Elizabeth between Brill's Yard in Newark and the North Jersey Coast Line in Perth Amboy. This line provides connections with the port facilities. The Newark Elizabeth Running Track runs between Oak Island Yard in Newark and Elizabethport. It is part of Conrail Shared Assets between the Raritan Valley Line and the Northeast Corridor, and part of CSX between the Northeast Corridor and Chemical Coast Line.

The Port Authority is working to provide a comprehensive on-dock rail network, the ExpressRail System, to serve all of its major container terminals. This effort includes ExpressRail Elizabeth, a 70-acre on-dock intermodal rail terminal, with a lead track grade-separated from the McLester Street/Bay Avenue intersection. The project is intended to reduce conflicts with truck traffic and provide direct rail access to and from the port. The facility has an annual through-put capacity of one million lifts. Phase I began operations in October 2004.

The Norfolk Southern E-Terminal is operated by the K Line's Rail Bridge subsidiary, the Rail Bridge Corporation. The major clients are shippers of domestic containers and K Line Pacific Rim cargo. It provides trans-continental double-stack service.

The CSX Trumbull Street Yard is a reload center that CSX controls and exclusively uses.

Air Cargo

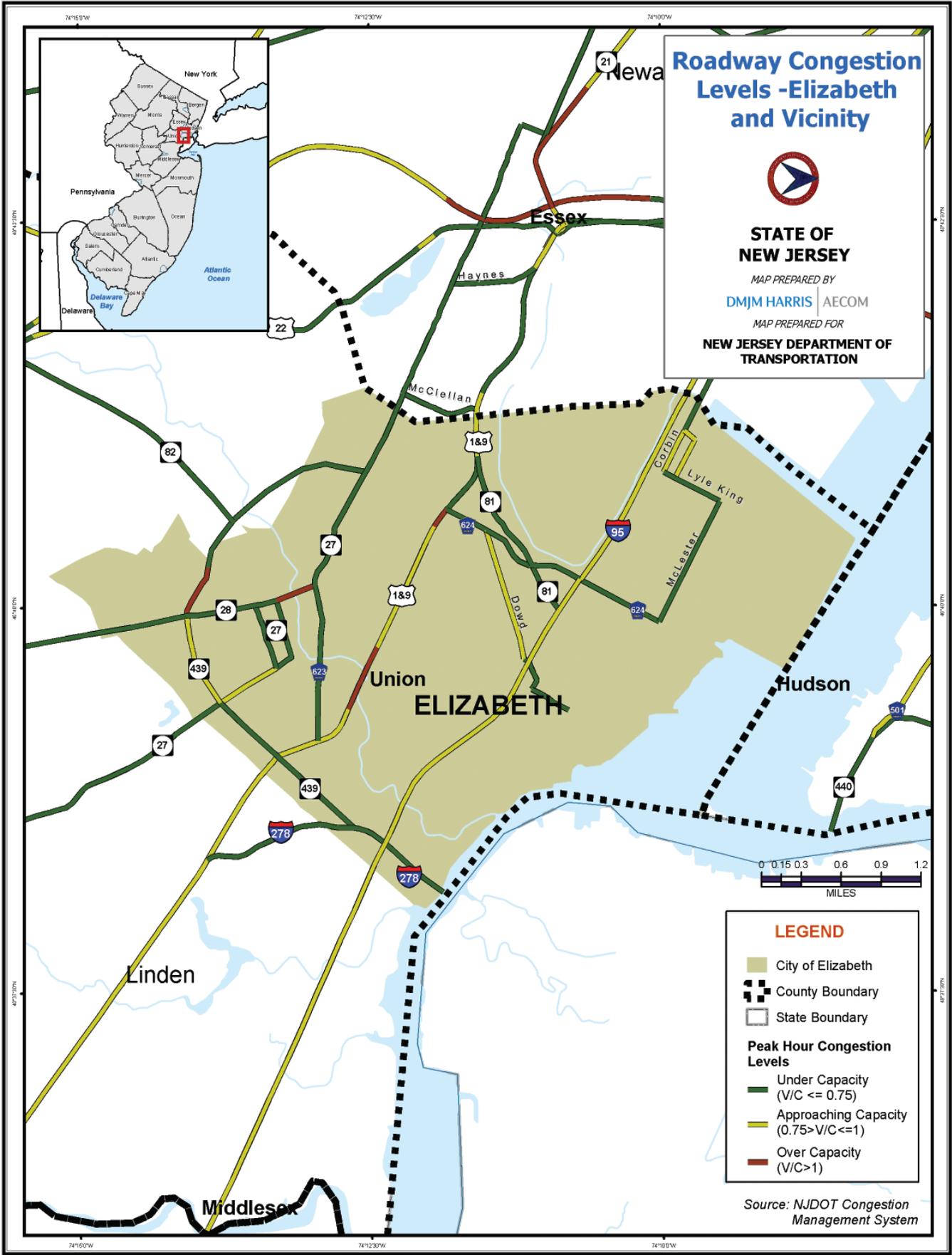
Newark Liberty International Airport is also an important goods movement facility. The airport's South Area, located in Elizabeth, includes Federal Express and United Parcel Service facilities. In 2004, the airport handled over 27,000 cargo flights, which carried over 995,000 short tons of domestic and international revenue freight. This amount has increased since 2002, but it is lower than the peak in 1999.

B. SYSTEM PERFORMANCE

1. Congestion Management System

NJDOT's Congestion Management System (CMS) is a primary source of information on roadway congestion. The CMS measures congestion based upon a volume-to-capacity (v/c) ratio. Roadways operating below a 0.75 v/c ratio operate well and have the capacity to accommodate growth. On the other hand, roadways approaching a 1.0 v/c ratio have little ability to accept additional growth, and a v/c over 1.0 suggests that the roadway is operating at failing conditions and does not have the capacity for added traffic. Map 3 shows the 2005 v/c ratios for Elizabeth and the immediately surrounding area. The city has several road segments that are above capacity including segments of US 1&9, Route 27, and Route 439.

Map 3: Road Congestion Levels



2. Pavement Conditions

NJDOT maintains a Pavement Management System (PMS) database with information on pavement conditions. The PMS includes all interstate, toll, state and US highways, plus significant 500- and 600-level county roads, and some local routes of regional significance. The rating system for the roadways is based primarily on two criteria: ride quality and surface distress. The Ride Quality Index (RQI) describes the comfort level by measuring roughness, and the Surface Distress Index (SDI) compiles and measures the severity of surface distresses such as cracking, patching, shoulder condition, shoulder drop, faulting, and joints. A final pavement rating is calculated from RQI and SDI to determine pavement quality. These ratings, in conjunction with roadway types, are used to determine priorities for resurfacing projects throughout the state.

Table 1 shows the pavement condition of state roads in Elizabeth, rated by the SDI, for 2004. The data show that about one-half of roads have “very good: or “good” pavement conditions, and over 80% have “very good,” “good,” or “fair” conditions. The roadway segments with “poor” or “very poor” conditions are located along US 1&9, Route 27, and Route 81.

Table 1: Elizabeth Pavement Condition Summary by SDI

Roadway	Total Pavement Miles (Both Directions)	Very Good Pavement SDI > 4	Good Pavement 4 > SDI > 3	Fair Pavement 3 > SDI > 2	Poor Pavement 2 > SDI > 1	Very Poor Pavement SDI < 1
1&9	6.6	2.2	1.2	1.0	2.2	0.0
27	6.2	2.5	0.8	1.5	1.2	0.2
28	2.8	0.5	0.2	2.1	0.0	0.0
81	1.2	0.3	0.3	0.5	0.0	0.1
439	5.0	2.5	0.3	2.2	0.0	0.0
Total	21.8	8.0	2.8	7.3	3.4	0.3
%	100%	36.7%	12.8%	33.5%	15.6%	1.4%

Source: NJ DOT Pavement Management System
 Note: Percentages do not add to 100% due to rounding.

In terms of roughness or ride quality, the International Roughness Index (IRI) reflects only the amount of existing surface irregularities that cause a vehicle to lose contact with the surface (measured as the amount of suspension over distance). As a more focused measure, IRI deficiencies are more striking, but treatment may be less costly in terms of overlays, rather than rehabilitation or reconstruction, which may be the treatment for SDI deficiencies. Table 2 shows the pavement condition of state roads in Elizabeth, rated by the IRI, also for 2004. The data show that nearly three-quarters of the roadway mileage has deficient conditions.

Table 2: Elizabeth Pavement Summary by IRI

Roadway	Facility Type	Total Pavement Miles (Both Directions)	Good Pavement	Fair Pavement	Deficient Pavement
1&9	NHS	6.6	0.1	1.8	4.7
27	STP	6.2	0.6	0.7	4.9
28	STP	2.8	0.9	0.7	1.2
81	NHS	1.2	0.0	0.0	1.2
439	NHS	5.0	0.0	0.8	4.2
Total	-	21.8	1.6	4.0	16.2
%	-	100%	7.3%	18.3%	74.3%

Source: NJ DOT Pavement Management System

3. Bridge Conditions

NJDOT employs a Bridge Management System (BMS) to maintain an inventory of all bridges with spans over 20 feet, listing the physical characteristics, condition and ownership of each bridge. The bridges are rated for their structural condition as well as functional characteristics. NJDOT combines Information on structural condition with bridge size and roadway type to help determine priorities for bridge improvement projects.

The city has 106 bridges in the BMS; of this total about one-fourth were structurally deficient or functionally obsolete in 2005 (see Table 3). This figure compares with a statewide average of 35%.

Table 3: Bridges with Substandard Conditions

Location	Total Bridges in BMS	Structurally Deficient	Functionally Obsolete	Substandard Bridge Total	% of Total Bridges
Elizabeth	106	5	23	28	26%
State	6,415	779	1,459	2,238	35%

Source: NJDOT, Bridge Management System

4. Safety Conditions

NJDOT's Bureau of Safety Programs produces an annual report of motor vehicle crash rates (per one million vehicle miles traveled) for roads under NJDOT jurisdiction. Table 4 shows the state road segments with the highest crash rates in Elizabeth in 2004.

Table 4: State Road Segments with Highest Crash Rates – Elizabeth, 2004

Road	Location	Length	Crashes	Rate
Route 439	Magie Avenue – Bailey Avenue	.11	20	19.67
Route 439	Chilton Street – Emerson Avenue	.08	11	14.88
Route 27	Westfield Avenue – Broad Street	.31	26	13.93
US 1&9	Jersey Street – North Avenue	1.15	376	13.49

Source: NJDOT, Bureau of Safety Programs

Data from the Elizabeth Police Department show that the intersection of US 1&9 with North Avenue alone had 163 crashes in 2004. If the NJDOT crash data were to isolate this location, the crash rate for this segment likely would be the highest crash rate in the city.

C. DEMOGRAPHIC PROFILE

This section provides a summary of demographic characteristics of the City of Elizabeth. It examines changes in the city, county, and state over the past twenty years, with an emphasis on trends since 1990.

1. Population

Over the years up to 1990, Elizabeth's population remained relatively constant. Between 1990 and 2000, however, the population increased by nearly 10%, a rate of increase even higher than the statewide average (see Table 5).

Table 5: Total Population – Elizabeth, Union County, New Jersey, 1980-2000

	1980	1990	2000	Change 1990 - 2000	
				Number	Percent
Elizabeth	106,201	110,002	120,568	10,566	9.6%
Union County	504,094	493,819	522,541	28,722	5.8%
New Jersey	7,365,011	7,730,188	8,414,350	684,162	8.9%

Source: U.S. Department of Commerce, Bureau of Census. 1980, 1990, 2000.

2. Age Distribution

The city has a somewhat different age distribution than that of the county or state (see Table 6). Elizabeth has a lower percentage of population over 65 and a higher percentage of population in younger age groups. The median age of city residents is well below that of the county or state.

Table 6: Age Profile of the Population – Elizabeth, Union County, New Jersey, 1980-2000

	1980	1990	2000
<5 Years			
Elizabeth	7.0%	7.5%	7.7%
Union County	5.6%	6.6%	7.0%
New Jersey	6.3%	6.9%	6.7%
5-19 Years			
Elizabeth	22.1%	19.9%	21.4%
Union County	22.2%	17.6%	20.1%
New Jersey	24.2%	19.1%	20.4%
20-64 Years			
Elizabeth	57.8%	60.6%	61.0%
Union County	59.4%	60.8%	59.1%
New Jersey	57.8%	60.6%	59.7%
65+ Years			
Elizabeth	13.1%	12.0%	10.0%
Union County	12.8%	15.0%	13.8%
New Jersey	11.7%	13.4%	13.2%
Median Age			
Elizabeth	32.2	32.2	32.6
Union County	32.5	33.7	36.6
New Jersey	32.0	34.4	36.7

Source: U.S. Department of Commerce, Bureau of Census. 1980, 1990, 2000.

3. Racial and Ethnic Composition

The city experienced a shift in racial and ethnic composition during the 1990s (see Tables 7 and 8). The percentage of non-white population increased from 35% to 44% in 2000; the percentage of Hispanic population increased from 39% to 50%. Union County is 25% non-white and 20% Hispanic population and the state has 20% non-white and 13% Hispanic population.

Table 7: Racial Composition of the Population, 1990-2000

	1990	2000
White		
Elizabeth	65.5%	55.8%
Union County	74.4%	75.2%
New Jersey	79.3%	72.6%
Black		
Elizabeth	19.8%	20.0%
Union County	18.8%	20.4%
New Jersey	13.4%	13.6%
Other Races*		
Elizabeth	14.7%	24.2%
Union County	6.8%	4.4%
New Jersey	7.3%	13.8%

Source: U.S. Department of Commerce, Bureau of Census. 1990, 2000.

* "Other Races" include Asian, Pacific Islander, American Indian, and Alaska Native. It also includes persons who reported that they are "2 or more" races. Since the Census Bureau used this category for the first time for the 2000 Census, some of the shift in the racial composition between 1990 and 2000 may be attributable to persons selecting this category. Hispanic origin is not a race; therefore, persons of Hispanic origin may be included in any of the race categories.

Table 8: Percentage of Hispanic Population, 1990-2000

	1990	2000
Elizabeth	39%	50%
Union County	14%	20%
New Jersey	10%	13%

Source: U.S. Department of Commerce, Bureau of Census. 1990, 2000.

4. Income and Poverty

Median household income in Elizabeth increased by 27% in the 1990s, but this rate of increase was lower than that for the county and state, and the city's 2000 median income remains well below that of the county and state (see Table 9). Also, the percentage of persons below the poverty level increased during the decade, and the city's poverty rate is much higher than that of the county and state.

Table 9: Income and Poverty, 1979-1999

	1979	1989	1999	Change 1989-1999	
				Number	Percent
Median Household Income					
Elizabeth	\$15,423	\$27,631	\$35,175	\$7,544	27.3%
Union County	\$36,236	\$41,791	\$55,339	\$13,548	32.4%
New Jersey	\$33,1778	\$40,927	\$55,146	\$14,219	34.7%
% Individuals Below Poverty Level					
Elizabeth	15.8%	16.1%	17.8%		
Union County	7.5%	7.2%	8.4%		
New Jersey	9.5%	7.6%	8.7%		

Source: U.S. Department of Commerce, Bureau of Census, 1980, 1990, 2000.

5. Automobile Ownership

The rate of automobile ownership in the city decreased slightly between 1990 and 2000 and remains below that of the county and state (see Table 10). About one-quarter of households in the city have no vehicles, and two-thirds of households have zero or one vehicle.

Table 10: Percentage of Households with a Vehicle, 1980-2000

	1980	1990	2000
Elizabeth	75.6	75.5	74.8
Union County	83.8	87.8	87.3
New Jersey	85.2	87.1	87.3

Source: U.S. Department of Commerce, Bureau of Census, Population and Housing 1980, 1990; 2000

6. Labor Force

Both the city and county experienced decreases in employed residents between 1990 and 2000 (see Table 11). Even though the total number of persons aged 16 or over in the city increased, the labor force participation rate decreased from 66% to 57%.

Table 11: Employed Residents, 1980 – 2000

	1980	1990	2000	Change 1989-1999	
				Number	Percent
Elizabeth	48,490	50,977	47,671	-3,306	-6.5%
Union County	242,073	252,215	244,197	-8,018	-3.2%
New Jersey	3,288,302	3,868,698	3,950,029	81,331	2.1%

Source: U.S. Department of Commerce, Bureau of Census, 1980, 1990, 2000.

7. Unemployment

The civilian resident unemployment rate decreased between 1990 and 2000, but it remains well above that for the county and state (see Table 12).

Table 12: Resident Unemployment Rate, 1980-2000

	1980 Percent	1990 Percent	2000 Percent
Elizabeth	8.4	9.9	9.0
Union County	5.8	5.4	5.6
New Jersey	7.2	5.7	5.8

Source: U.S. Department of Commerce, Bureau of Census, 1980, 1990, 2000.

8. Employment by Industry

Table 13 shows the number of employed city residents by the different industrial sectors in which they work. Most of the labor force works in service industries; only 25% work in manufacturing or construction.

Table 13: Resident Employment By Industrial Sector, Elizabeth, 2000

Industry	Number	Percent
Agriculture, forestry, fishing and hunting, and mining	39	0.1
Construction	2,849	6.0
Manufacturing	8,922	18.7
Wholesale trade	3,101	6.5
Retail trade	5,491	11.5
Transportation and warehousing, and utilities	5,103	10.7
Information	1,079	2.3
Finance, insurance, real estate, and rental and leasing	2,642	5.5
Professional, scientific, management, administrative, and waste management services	3,796	8.0
Educational, health and social services	7,114	14.9
Arts, entertainment, recreation, accommodation and food services	3,360	7.0
Other services (except public administration)	2,652	5.6
Public administration	1,523	3.2

Source: U.S. Department of Commerce, Bureau of Census, 2000.

9. Employment by Occupation

Table 14 shows the number of employed city residents by their various occupational categories. The percentage of city workers in “Management, Professional, or Related Occupations” (18%) is much lower than that for the county (35%) or state (38%).

Table 14: Resident Employment By Occupation, Elizabeth, 2000

Occupation	Number	Percent
Management, professional, and related occupations	8,698	18.2
Service occupations	8,488	17.8
Sales and office occupations	12,356	25.9
Farming, fishing, and forestry occupations	44	0.1
Construction, extraction, and maintenance occupations	4,539	9.5
Production, transportation, and material moving occupations	13,546	28.4

Source: U.S. Department of Commerce, Bureau of Census, 2000.

10. Journey to Work – Resident Labor Force

In 2000, the percentage of Elizabeth’s resident labor force that worked in the city was 29%, a decrease from 34% in 1990. Over 20,000 city residents work in locations outside the city (see Table 15). Approximately 56% of residents work within the county; this percentage is down from 60% in 1990. Other current significant employment locations for city residents are Essex County, Middlesex County, and New York County, NY (Manhattan). The leading employment destinations (other than Elizabeth) for city residents are Newark (10%), Linden (5%), Union (5%), Manhattan (4%), Edison (3%), and Woodbridge (3%).

Table 15: Location of Employment – Elizabeth Residents, 2000

County	Municipality	Number	%	Number	%
Union		26,037	56%		
	Elizabeth			13,488	29%
	Linden			2,505	5%
	Union			2,480	5%
	Other			7,564	16%
Essex		7,096	15%		
	Newark			4,651	10%
	Other			2,445	5%
Middlesex		4,706	10%		
	Edison			1,241	3%
	Woodbridge			1,221	3%
	Other			2,244	4%
New York, NY		1,768	4%		
Other		7,296	16%		

Source: US Department of Commerce, Bureau of Census, 2000.

In 2000, 41% of resident workers used modes other than single-occupancy vehicles as their primary commute mode, compared to 29% in the county and 27% for the state. The share of commuters using public transit as their preferred mode was 15%, compared to 11% for the county and 10% for the state. This percentage increased from 11% in 1990. The average commute time for all workers who do not work at home was 28 minutes.

11. Employment

Total covered employment in Elizabeth (including private sector, federal government, and local government jobs) in 2003 was 45,048, a 6% increase from 1998. The major employment sectors are local government, transportation and warehousing, retail, health care, and manufacturing. Although manufacturing is an important sector, it accounts for only 13% of the city's private sector employment (see Table 16).

Table 16: Covered Employment by Sector – Elizabeth, 2003

Industry	Number
Utilities	43
Construction	1,217
Manufacturing	4,787
Wholesale trade	2,523
Retail trade	6,132
Transportation and warehousing	7,284
Information	104
Finance and insurance	819
Real estate and rental and leasing	477
Professional and technical services	539
Management of companies and enterprises	186
Administrative and waste services	2,997
Educational services	166
Health care and social assistance	4,848
Arts, entertainment, and recreation	
Accommodation and food services	2,080
Other services, except public administration	1,032
Unclassified entities	203
Private-sector Municipality Total	35,537
Federal Govt Municipality Total	936
Local Govt Municipality Total	8,575

Source: NJ Department of Labor. New Jersey Employment and Wages: 2003 Annual Report Municipalities by Industry, Union County. Covered employment refers to jobs covered by unemployment insurance. Data represent average employment for 2003. Private sector total does not match sum of individual industries because NJDOL suppresses data for industries with few units (businesses) or where one employer is a significant percentage of employment or wages of the industry.

12. Journey to Work – Employees in the City

Table 17 shows the distribution of the residences of persons who work in the city, as compiled from the 2000 US Census. About one-third of employees live in the city, and 56% live in the county. Other leading counties of residence are Essex, Middlesex, and Hudson. Outside Elizabeth, the leading municipalities of residence are Linden, Newark, Union, and Roselle. Interestingly, the pattern of distribution for employees is somewhat similar to that for resident workers, i.e., the same locations that attract city residents also send workers to the city.

Table 18: Location of Residence – Elizabeth Employees, 2000

County	Municipality	Number	Number	%	%
Union		23,302		56%	
	Elizabeth		13,488		33%
	Linden		1,998		5%
	Union		1,406		3%
	Roselle		1,126		3%
	Other		5,284		13%
Essex		4,441		11%	
	Newark		1,807		4%
	Irvington		726		2%
	Other		1,908		5%
Middlesex		3,719		9%	
	Woodbridge		927		2%
	Edison		569		1%
	Other		2,223		5%
Hudson		1,786		4%	
	Jersey city		621		2%
	Other		1,165		3%
Other		8,033		20%	

Source: US Department of Commerce, Bureau of Census, 2000.

D. FUTURE CONDITIONS

1. Population and Employment Projections

NJTPA makes population and employment projections for its region, which includes Union County. These projections indicate that Elizabeth’s population will increase by 26% between 2000 and 2030 (see Table 18). Maps 4 and 5 show the current (2000) and projected (2030) population density for the city. According to NJTPA, the city also will experience a significant increase in employment (over 9,500 jobs) between 2000 and 2030 (see Table 19). Maps 6 and 7 show the current (2000) and projected (2030) employment density for the city.

Table 18: Population Projections – Elizabeth, Union County, 2000–2030

	2000	2005	2010	2015	2020	2025	2030	Change 2000-2030
Elizabeth	120,570	128,300	133,020	137,310	143,930	149,530	152,120	26.2%
Union County	522,500	533,900	543,400	556,600	578,600	600,600	612,100	17.1%

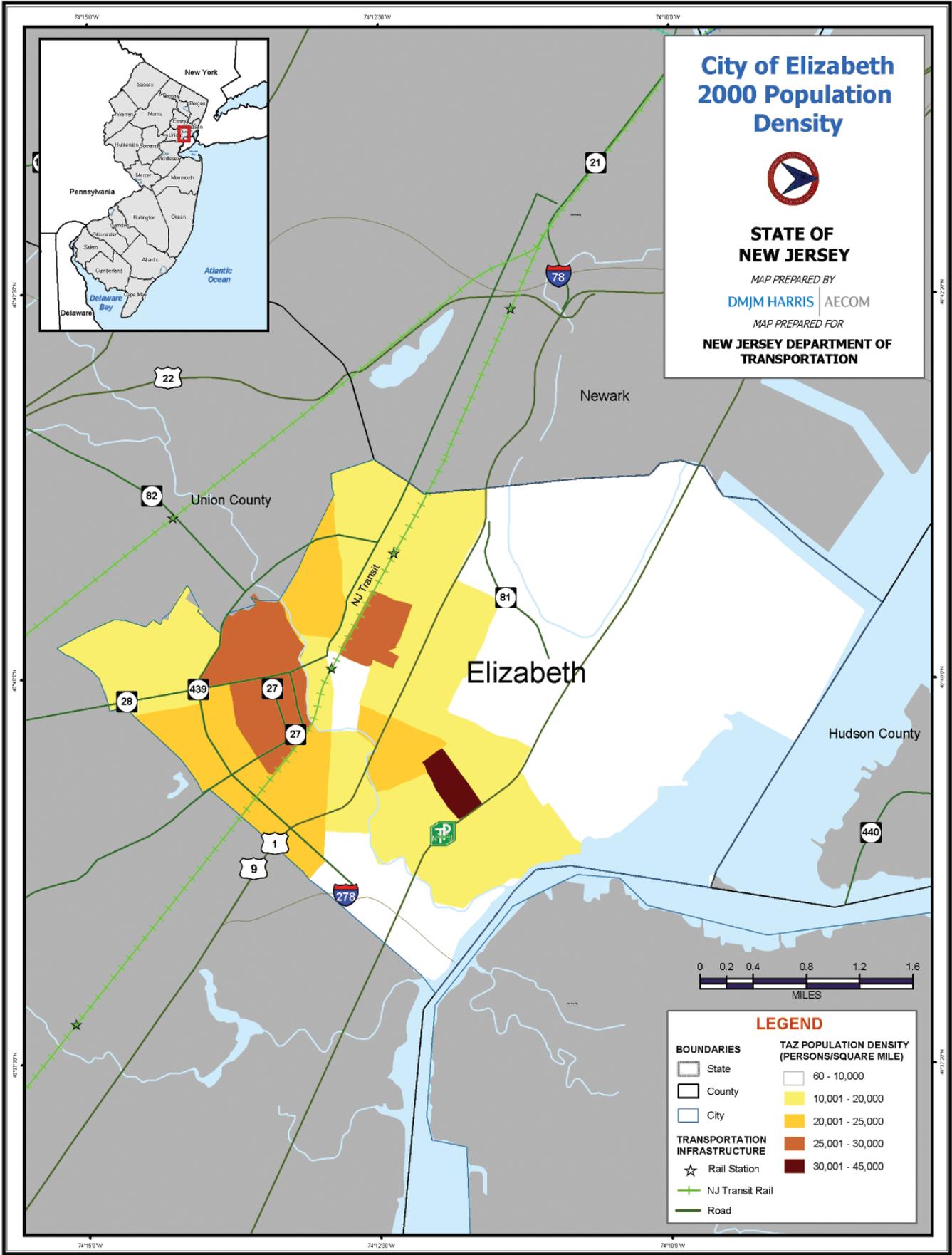
Source: North Jersey Transportation Planning Authority, May 2005.

Table 19: Employment Projections – Elizabeth, Union County, 2000–2030

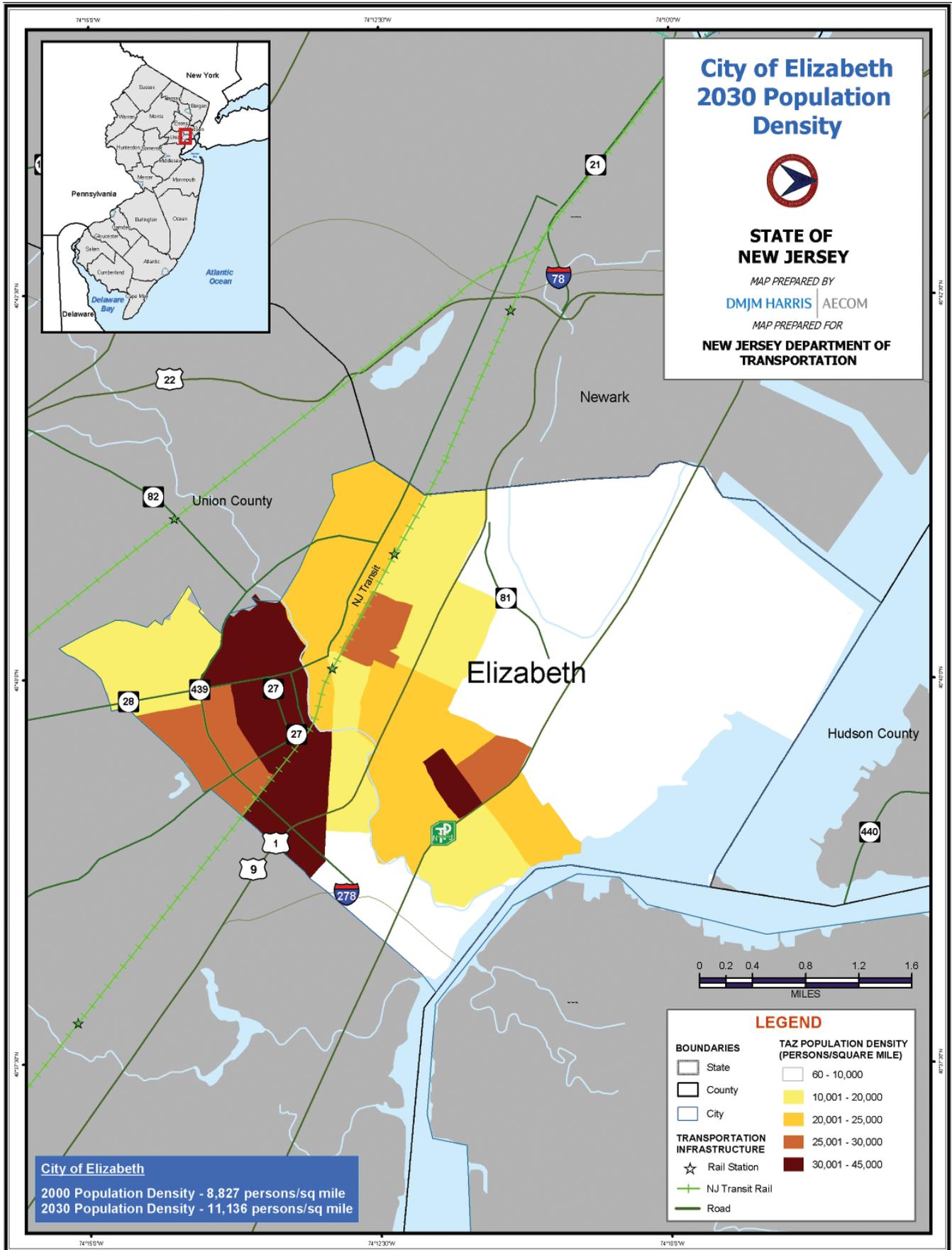
	2000	2005	2010	2015	2020	2025	2030	Change 2000-2030
Elizabeth	42,020	43,420	44,120	46,130	48,140	50,350	51,640	22.9%
Union County	251,600	256,000	258,400	265,800	273,300	281,900	288,400	14.6%

Source: North Jersey Transportation Planning Authority, May 2005.

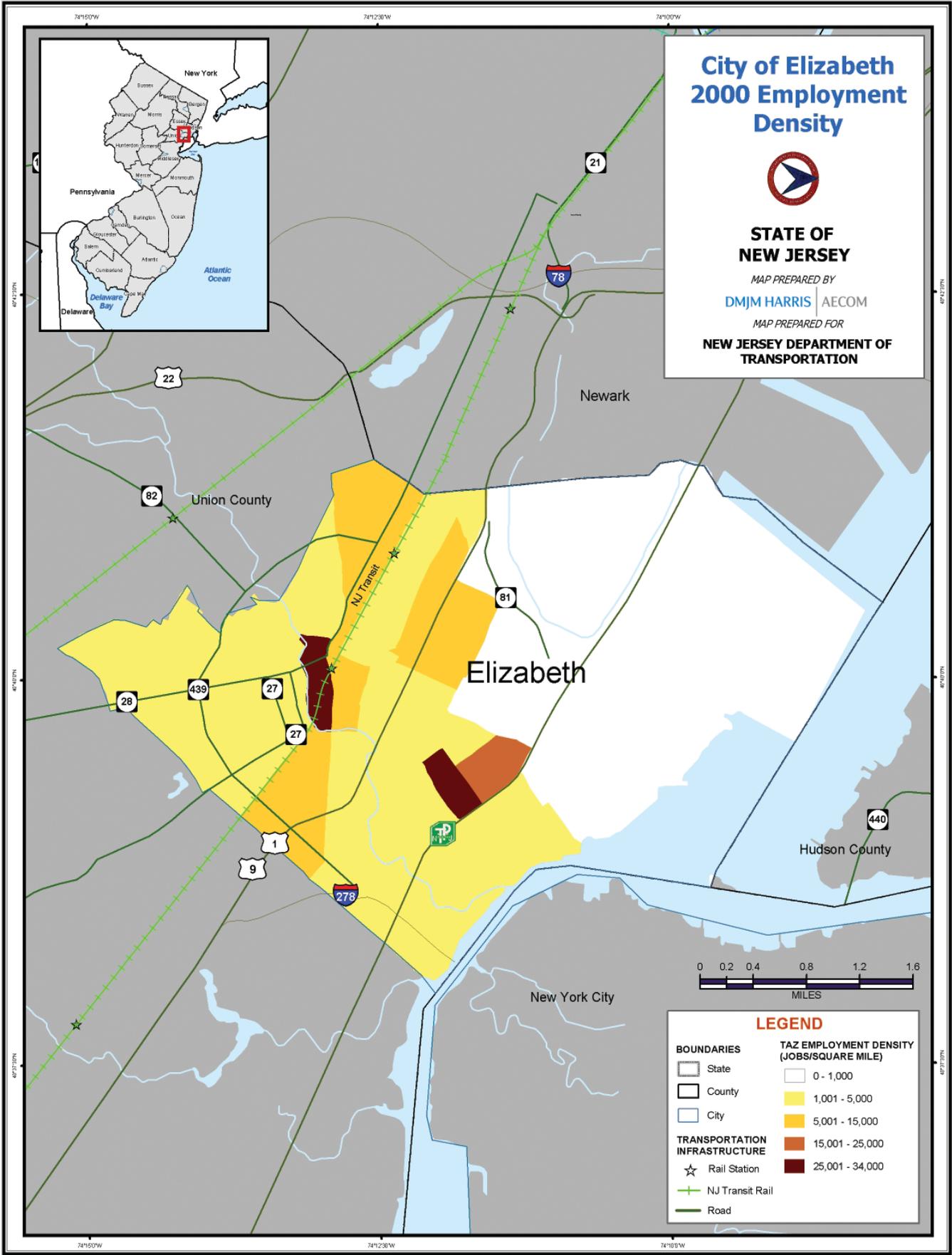
Map 4: 2000 Population Density



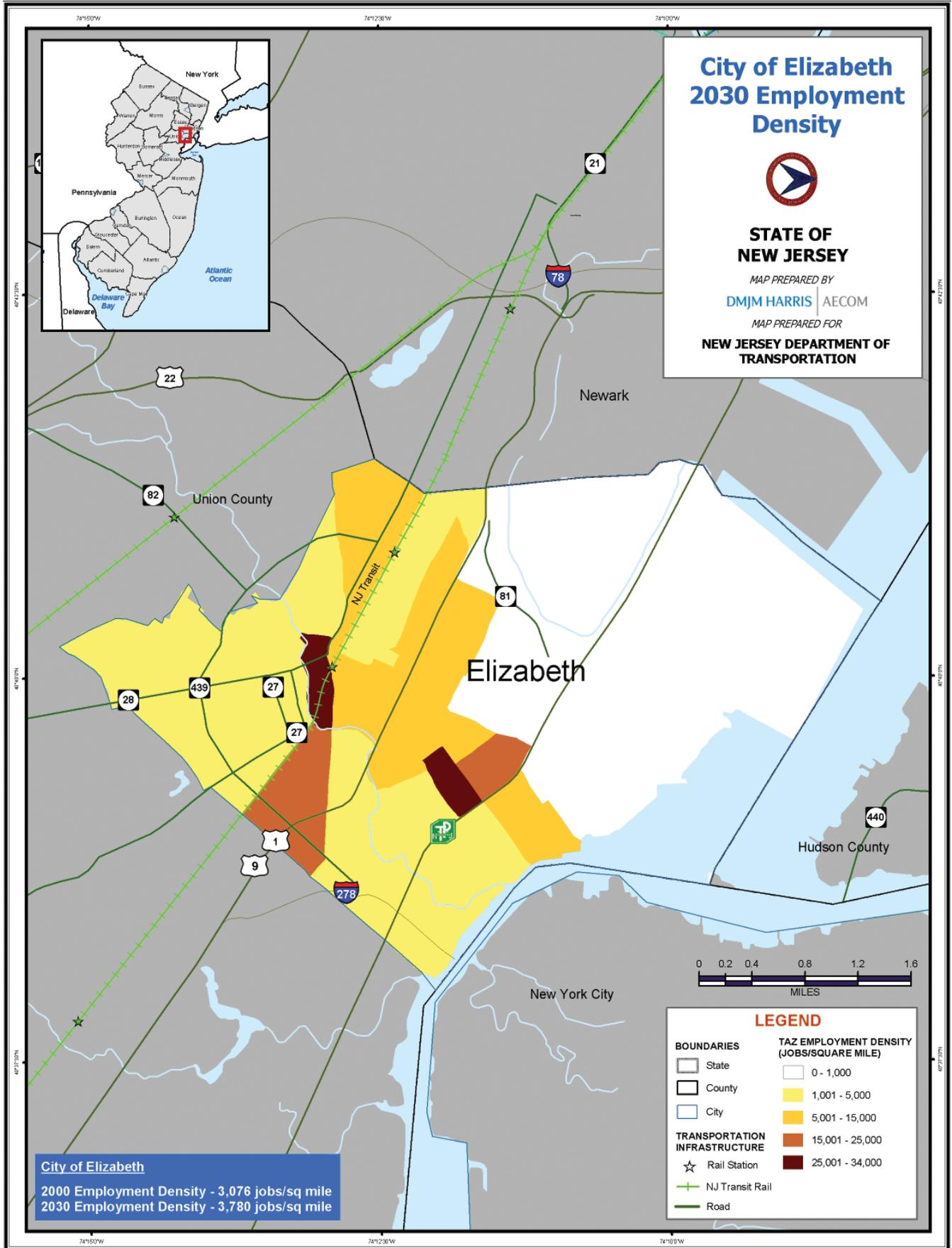
Map 5: 2030 Population Density



Map 6: 2000 Employment Density



Map 7: 2030 Employment Density



2. Transportation Conditions

Regional transportation models enable analysis of current and future travel conditions based upon various assumptions about land use and transportation system capacity. The model output can be used to prepare “travel time contour” maps, which show how far a motorist could travel between a specific point (e.g., the center of a city) and other points on the surrounding roadway system within given time frames. These maps reflect the impact of roadway congestion upon travel time.

The work on the New Jersey Long-Range Transportation Plan included analyzing and preparing travel time contour maps for existing conditions (2005) and the 2030 Plan. These maps cover the surrounding roadway network that lies within the NJTPA region. The calculations are based upon evening peak hour traffic volumes, and they are based upon traffic heading both to and from the central point.

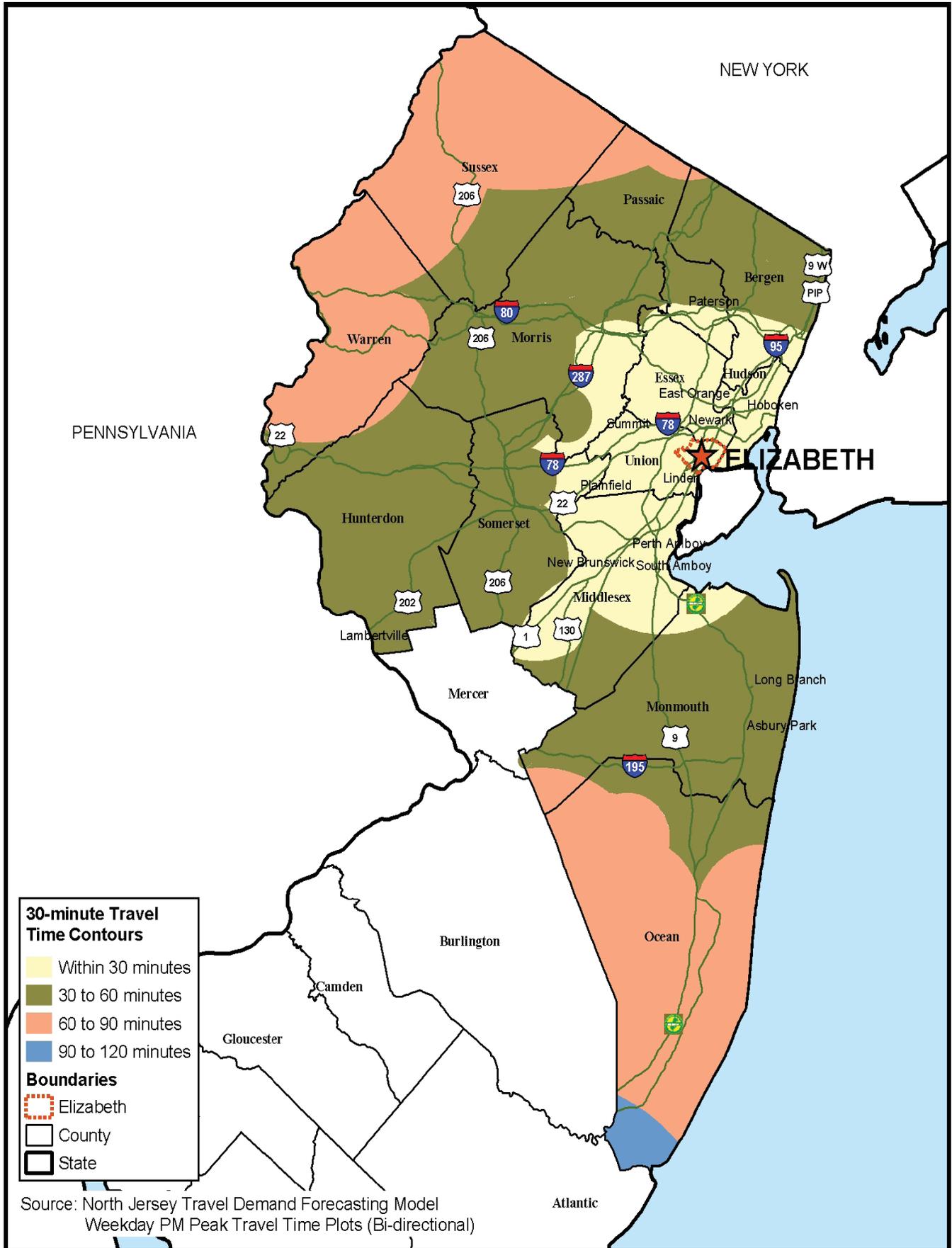
The 2005 existing condition map shows the current travel time limits (see Map 8).

The 2030 Plan map illustrates travel time with the package of transportation system investments contained in the 2030 Plan (see Map 9). The statewide long-range transportation plan, Transportation Choices 2030, contains specific information on these investments, and the plan is available on the internet at www.njchoices.com, the website for the statewide long-range transportation plan. The 2030 Plan recognizes the importance of completing key transit projects, and it envisions a significant infusion of additional funds for transit-related projects and bringing transportation infrastructure to a state of good repair. The 2030 Plan also assumes reducing some auto trips by more aggressive travel demand management measures and adopting smart growth measures for new development and redevelopment.

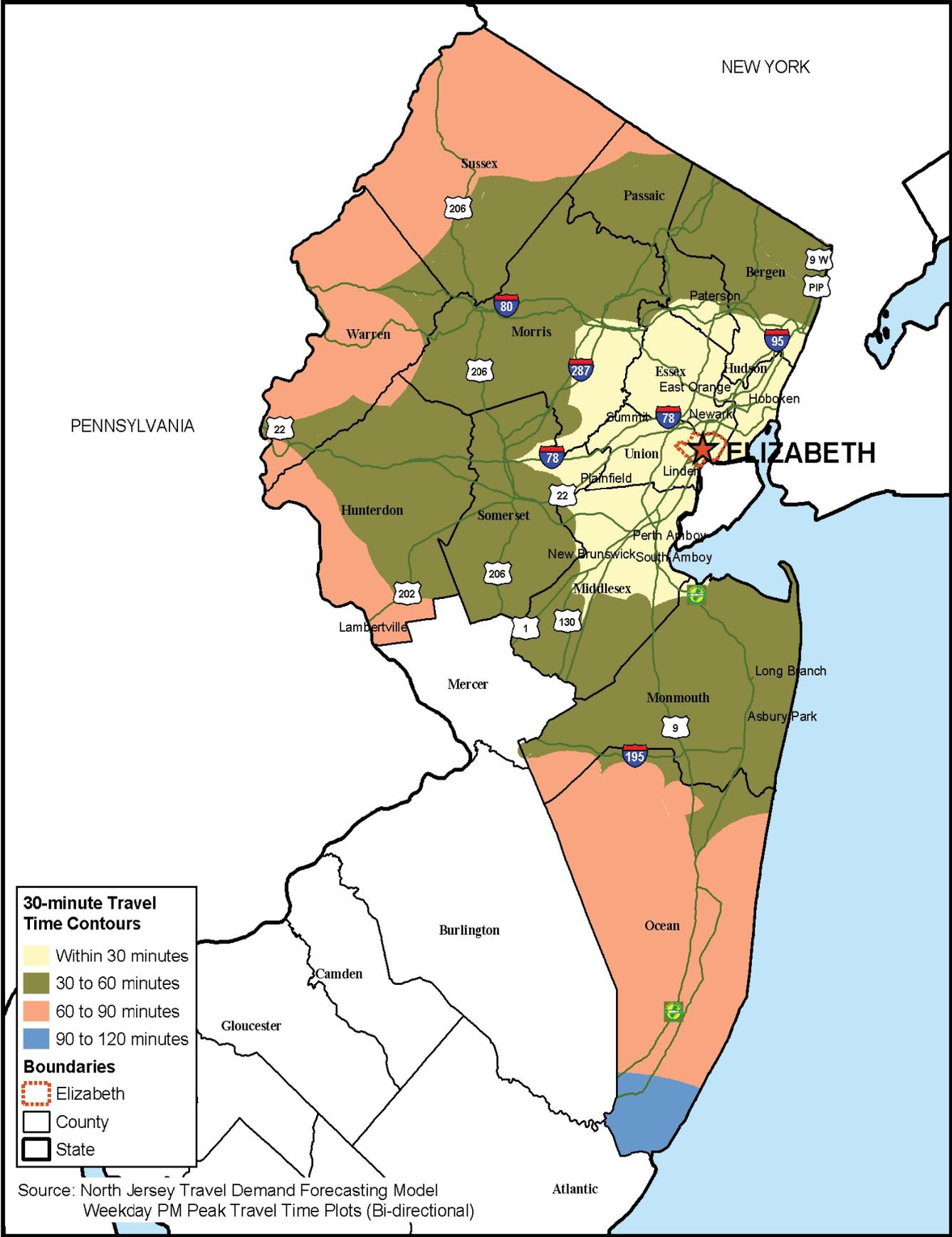
As a contrast, Map 10 shows anticipated travel time limits in 2030 without the level of investments that are contained in the 2030 Plan.

It is important to understand that these maps do not reflect public transit travel times. Public transit provides significant levels of access and mobility for the state's largest cities, and increases in transit service would be expected to increase these levels of access and mobility.

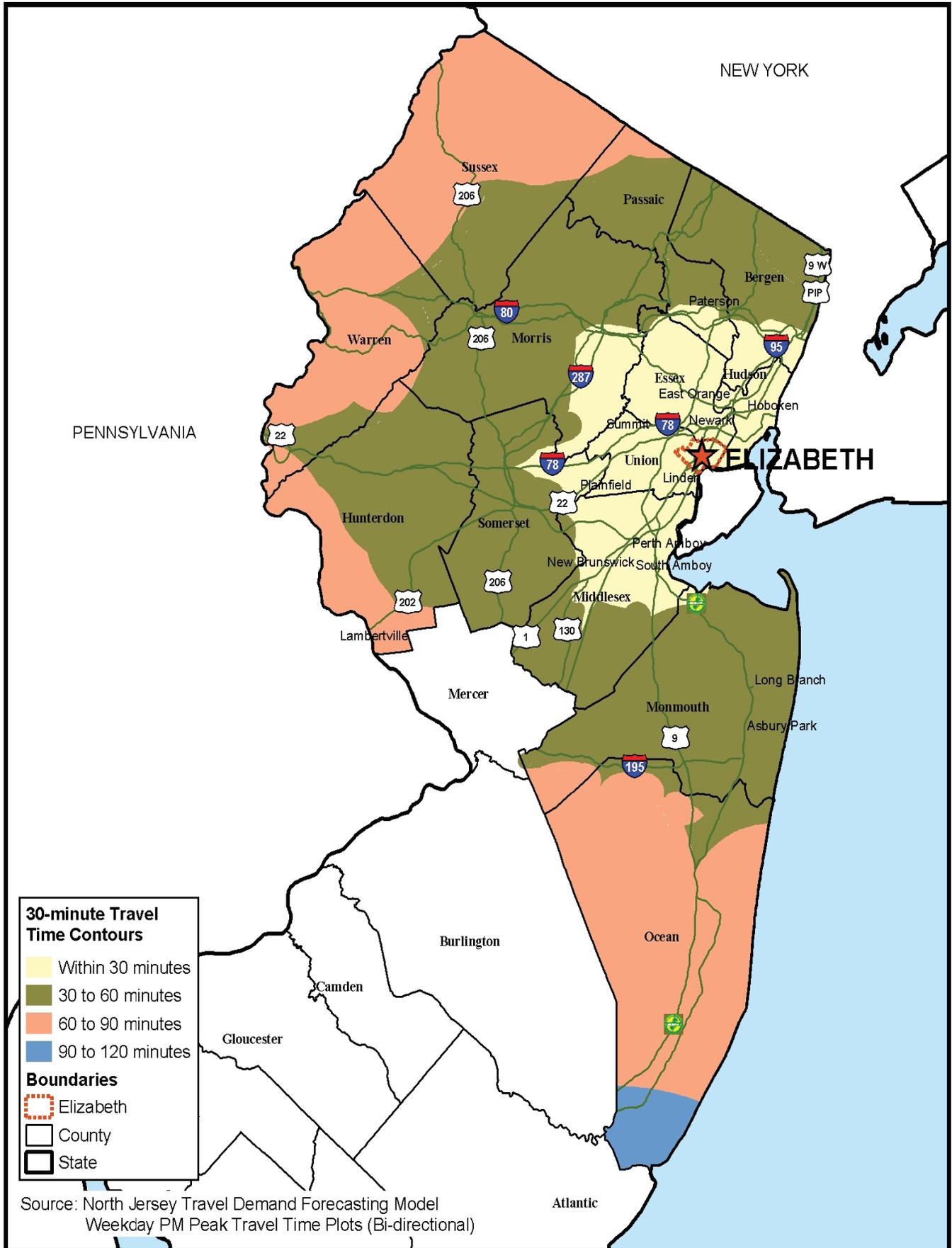
Map 8: Travel Time Contours, Elizabeth, 2005



Map 9: Travel Time Contours, Elizabeth – Plan



Map 10: Travel Time Contours, Elizabeth - without Plan



E. CURRENT AND FUTURE DEVELOPMENT

This section provides a summary of current and future development potential in Elizabeth and the surrounding area, with an emphasis on non-residential development.

1. City

Existing Development

Downtown/Midtown

As the county seat of Union County, Elizabeth has many county buildings and offices in the downtown area. The Administration Building is located at 10 Elizabethtown Plaza. The court complex comprises three buildings : the Main Courthouse is located at 2 Broad Street at the corner of Rahway Avenue, the Courthouse Annex Building (15 stories) is located just behind the Main Courthouse on Elizabethtown Plaza, and the Albender Building is located at 1143-1145 East Jersey Street, approximately three blocks from the Main Courthouse. City Hall is located at 50 Winfield Scott Plaza.

Also in the downtown area is Union County College's Elizabeth Campus, located in the Lessner Building. The facilities include the Trinitas School of Nursing.

The downtown area has two main retail districts: Broad Street/Midtown and Elizabeth Avenue. The midtown area includes 230 retail establishments and restaurants, and Elizabeth Avenue between Bridge Street and the Turnpike has over 300 merchants.

Port/Airport

The Port of Newark/Elizabeth and the Newark Liberty International Airport are major employment centers. The area around the port and airport has many warehouses supporting air cargo, aviation service, maritime, and regional distribution facilities.

Port Newark and the Elizabeth Port Authority Marine Terminal operate as one fully integrated marine terminal. The Port Authority of New York & New Jersey operates the complex, which provides 2,300 jobs in Elizabeth.

Most of the airport, which employs over 18,000, is located in Newark. Most of Terminal A, however, along with the airport's South Area, including Federal Express and United Parcel Service facilities, is located in Elizabeth. The Federal Express automated sort facility employs over 3,300. Many hotels are located near the airport, including five along US 1&9 in Elizabeth (Hilton, Hampton, Sheraton, Wyndham, and EconoLodge), with a total of nearly 1,300 rooms.

Elizabeth Center (Jersey Gardens/IKEA Complex)

Just south of the airport and port is a major regional retail center. The Elizabeth Center at 13A, featuring the top grossing IKEA store in the country, has about 800,000 square feet of retail space, and the Jersey Gardens outlet mall, which opened in 1999, has about 200 stores with 1.3 million square feet of space. Jersey Gardens has created nearly 4,000 permanent jobs, an estimated 2,000 of them filled by Elizabeth residents. The mall has evolved into a regional tourist destination, including a 22-screen movie theater, restaurants, and other attractions. The Loews Theatre's attendance ranks among the highest in the country. The mall has been promoting trips from New York City and "shop and stay" packages with nearby hotels. The immediate area has four hotels: the Marriott Courtyard, Residence Inn by Marriott, Extended Stay America, and Country Inn and Suites.

Health Care

The major health care facility is Trinitas Hospital, which consolidates the former St. Elizabeth Hospital and Elizabeth General Medical Center. Operating on two major campuses, Williamson Street and New Point (on East Jersey Avenue), the hospital has 531 beds, including a 120-bed long-term care center, and it employs about 2,400 people. The hospital recently completed a new Comprehensive Cancer Center with radiation and medical oncology programs, along with space that will allow other programs within the hospital to expand in the future.

Industrial

The city has several industrial/manufacturing facilities. The Bayway Industrial Centre has over one million square feet of industrial and office space. Wakefern Foods, the nation's largest cooperative food wholesaler, has a 500,000 square foot warehouse and office facilities located along York Street. These facilities employ about 1,200 people. Papetti's Hygrade Egg Products is located off Trumbull Street. Topps Meat, the nation's leader producer of frozen pure-beef hamburgers, is located on East Broad Street. Phelps Dodge Wire and Cable, located along Bayway Avenue, manufactures specialty copper products for industrial, transportation, and communication uses.

Future Development

The city's new Master Plan identifies several proposed development and redevelopment areas. The following sections describe the key potential development areas.

Midtown Redevelopment District

The city is seeking new residential and commercial development for this area, and it is soliciting developers for several sites. Union County College is planning a new 75,000 square foot building, which will include a library, information commons, and instructional space; the state and county have approved funding for this project. In addition, the city is hoping to develop a downtown multicultural arts district with the Ritz Theatre as the focal point.

Morris Avenue Streetscape Improvement Plan

This plan envisions an urban village along the Morris Avenue Business District. Proposed elements of the plan include 300-400 residential units, up to 450,000 square feet of commercial office and rental space, two multi-level parking garages, and open space improvements. These projects are anticipated to generate over 1,500 jobs.

Airport/Port Area

The county has prepared a Port Master Plan for the airport and port area. The plan identifies three economic development districts, two in Elizabeth, along with proposed uses for each. The first district is just south of the airport, and proposed uses include hotels and conference centers, industrial support operations for the airport, entertainment and retail, and distribution centers. The second zone, just east of the Turnpike, includes the Jersey Gardens Mall; proposed uses include entertainment and retail, hotel and conference centers, and offices.

A previous transportation/land use study calculated the development potential for this area, also known as the Kapkowski Road/North Avenue area. It estimated that by 2021, this area will have over 5 million square feet of office space, 2.7 million square feet of industrial/warehouse space, 460,000 square feet of retail space, and 5,800 hotel rooms. The city has indicated that it believes that actual build-out will be somewhat less than these numbers.

IKEA has a four-year expansion project in four phases. Phase 1 provides for a 102,400 square foot retail center. Phase 2 will see the development of an additional 60,400 square foot retail space, and Phase 3 will complete the retail development portion of the plan with an additional

90,000 square foot retail component. Phase 4 will incorporate a full-service 550-room hotel with direct access to the proposed light rail station and two signature restaurants.

The Port Authority has several investment projects, including dredging, port facility improvements, and rail facility expansion, which are anticipated to increase freight volumes to and from the port (see Chapter II for more details). The Port Authority also has identified some areas in Elizabeth, including the Bayway area and the old Allied Signal property, as potential “portfields” sites, i.e., areas for potential warehouse/distribution development related to Port activity. The city, the port, and Catellus Commercial Group, LLC, recently agreed on a project for the Allied Signal property. Catellus will construct 1,200,000 square feet of warehouse space on approximately 69 acres, generating an estimated 260-460 new jobs. As part of the redevelopment agreement, Elizabeth residents will receive priority in the hiring process.

A major office complex, Bridgeview, on the waterfront has received approvals for 700,000 square feet of Class A office space.

Elizabethport

This area already has experienced redevelopment, largely funded by the federal Hope VI program. The city now is seeking additional residential, commercial, and industrial development in this area, and two redevelopment projects are proposed. The city recently reached agreement with a developer for a mixed-use project that will provide about 40,000 square feet of retail space, including a supermarket and pharmacy, along with 27 units of new market rate rental housing. The second project, 205-215 First Street, involves the construction of 3,000 square feet of retail space on the ground floor and 8-10 units of affordable rental units above.

In addition, several waterfront market rate residential projects are in the final planning stages. Also, the city is seeking developers for single-family housing on the American Chrome and Kull sites.

Other Redevelopment Areas

Other potential redevelopment areas include the following:

- ◆ South Front Street. The city is seeking developers for this area, which includes the Borne Chemical site. Approved uses for this area are light manufacturing, distribution, trucking, and office.
- ◆ Trumbull Street. The redevelopment plan for this area calls for light industrial and manufacturing uses, and the city has designated two developers for several sites.
- ◆ East Grand Street. Permitted uses under the redevelopment plan for this area include office, retail, and commercial.

The city’s Master Plan identifies additional redevelopment opportunities at the Singer, Wakefern, Bayway, and Elizabethtown Gas sites, all located in the eastern portion of the city.

In addition, NJTPA has conducted a study of the redevelopment potential of the old Reichhold Chemical site and identified the potential for 400,000 square feet of warehousing and distribution uses at this site, which could generate 200 or more jobs.

Public Schools

Elizabeth has a \$500 million, long-range school construction program. The city is planning up to 22 new buildings to meet the needs of the rapidly growing school-age population. Several new facilities recently have been completed, and others are under construction. The recently amended NJ School Construction Corporation Plan recommends three projects in Elizabeth for completion: new schools #27 and #28 (pre-K to 8) and an expanded and rehabilitated School #21.

The district has stated the need for four new high schools. The city and school board have been negotiating over potential sites, particularly the old United Gunitite site, which occupies an area near East Grand/Trumbull Street and Division Street. The city would like to develop a shopping center in this area. The old medical center site on Jersey Street is a possible location, but acquisition funds currently are not available.

2. Region

Section C.10 identified the leading employment destinations outside Elizabeth for city residents: Newark, Linden, Union, Manhattan, Edison, and Woodbridge. The following is a summary of these employment centers and future employment prospects in these areas. Available information suggests that they are likely to remain important employment areas for Elizabeth residents (see Table 20).

- ◆ Newark – The city has over 160,000 jobs, which provide a wide range of opportunities, including in the downtown and in the airport/port area adjacent to Elizabeth. Newark is experiencing considerable development and redevelopment activity in these areas and others, and NJTPA projects that the city's employment will increase by over 20,000 between 2000 and 2030.
- ◆ Union – North of the city, Route 82 (Morris Avenue) in Union is a key employment corridor. Kean University has 13,000 students and 376 full-time faculty. Schering Plough, a major pharmaceutical company, employs over 7,000 at facilities along Morris Avenue in Union and in Kenilworth. Union Hospital is located along Galloping Hill Road in Union.
- ◆ Linden – The largest employer in Linden, since the end of production at the General Motors plant, is Conoco Phillips with 800. The US 1&9 corridor is a major employment location. This corridor has substantial retail development activity, including Aviation Plaza and Linden Plaza. Additional development is likely to occur along US 1&9, as well as at Tremley Point, where over one million square feet of warehouse and distribution development is expected.
- ◆ Edison and Woodbridge – Moving farther south, both Edison and Woodbridge provide a wide range of office, commercial, and retail jobs. The two towns have a total of over 127,000 jobs. One major employment center is Raritan Center, a large business/industrial park located in Edison. It has more than 100 buildings with over 13 million square feet, housing more than 350 companies with over 13,000 employees. The nearby Heller Industrial Park has 8 million square feet of space. The Menlo Park Mall (1.3 million square feet) in Edison and Woodbridge Center (1.5 million square feet) are major regional shopping centers. Edison and Woodbridge together are projected to gain about 36,000 jobs between 2000 and 2030.
- ◆ Manhattan – Manhattan is the major New York City metropolitan employment center with over 350 million square feet of office space, including over 90 million in Lower Manhattan. Although Elizabeth-to-Manhattan commuting does not fit the typical definition of "reverse commuting," it is important to examine because of its impact upon the local transportation system. Manhattan is expecting continued employment growth, as several major new projects will reinforce and expand New York's prominence. Projections indicate that employment in Manhattan will increase by over 500,000 between 2000 and 2030.

Table 20: Current and Projected Employment in Key Employment Locations Near Elizabeth

Town	2000	2030	Increase	
			Number	Percent
Newark	160,010	180,420	20,410	13%
Linden	30,010	33,680	3,670	12%
Union	29,550	32,550	3,000	10%
Edison	72,290	91,440	19,150	26%
Woodbridge	45,370	62,210	16,840	37%
Manhattan	2,682,200	3,189,400	507,200	19%
Total	3,019,430	3,589,700	570,300	19%

Sources: NJTPA, NYMTC.

F. TRANSPORTATION SYSTEM ISSUES

This section assesses the operations and performance of existing transportation facilities and services. The objective is to identify critical transportation needs and develop recommendations necessary to support the city's land use and development objectives.

1. Roads

Regional Road Access/Congestion

One key issue is the need for better connections between the New Jersey Turnpike Exit 13, I-278 (to and from the Goethals Bridge), and US 1&9. The existing interchange was constructed with four "ghost" ramps; currently vehicles have no direct connection between US 1&9 southbound and I-278 eastbound, nor between I-278 westbound and US 1&9 northbound. The current configuration does not provide a good balance between the capacities of the Goethals Bridge with its approach roadways, nor does it provide direct access to and from the Bayway area. The city has concerns over the impacts of bridge traffic upon residential neighborhoods, including two public schools. Traffic from the bridge now dumps onto Bayway Avenue and US 1&9 near the schools.

Traffic flow and safety is a concern in the area surrounding Turnpike Exit 13A. This area experiences a combination of non-port and port traffic, lane weaving, and other conflicts. Previous planning studies have found that projected increases in port traffic will increase volumes and congestion in this area, and North Avenue soon will reach capacity. Increases in roadway capacity and efficiency will be necessary to support additional economic development in the nearby area.

A related issue is the toll pricing for Exits 13 and 13A. Currently, the toll for northbound NJ Turnpike traffic exiting for Elizabeth is less at Exit 13 than Exit 13A, encouraging traffic to use Exit 13, which in turn draws traffic to US 1&9 and local streets. Local officials would like to see the same charge at both exits so that more people will be willing to use the second one.

Traffic Volumes/Congestion

Section B.1 provided information on congestion on roads under NJDOT jurisdiction. Roadway segments in the city that are over capacity during peak periods are located along US 1&9, Route 27, and Route 439. The two congested locations along US 1&9 are at the Elizabeth River viaduct, which currently has only four lanes, and near the intersection of North Avenue. This corridor has a high percentage of truck traffic to total traffic.

Another major chokepoint on the regional roadway network is the Goethals Bridge, which carried over 28 million vehicles in 2004. As volumes have increased, congestion has increased, and the bridge has begun to operate below acceptable levels of service during peak periods. Traffic volumes and congestion are projected to increase, and the congestion will cause delays for both passenger traffic and goods movement.

Pavement and Bridge Conditions

As noted in Section B.2, NJDOT data indicates that sections of US 1&9 and Route 27 have poor pavement conditions, and about one-fourth of bridges in the city are structurally deficient or functionally obsolete. In addition, the Port Authority has determined that the Goethals Bridge is physically and functionally obsolete.

Roadway Safety

Section B.4 provides data on state road segments with high crash rates. These segments include portions of Route 439, Route 27, and US 1&9. The intersection of US 1&9 with North Avenue (Route 439) had the highest number of crashes in 2004.

Local Circulation

The city's previous Master Plan identified issues relating to circulation on the local roadway network, including the following

- ◆ Increased amount of through traffic in the central business district (CBD)
- ◆ Need to improve parking in the CBD and along major commercial corridors
- ◆ Substandard railroad overpasses, which restrict truck movements

Local Road and Bridge Conditions

Some local streets have poor pavement conditions and substandard bridges. The city has received approval for over \$1.4 million of NJDOT Local Aid projects over the past five years, and it is estimated that the city has considerably more roadway improvement needs than it has received funding for. Furthermore, the city has not completed all projects for which it has received funding.

Freight Movement Impacts/Needs

The county has identified concern about the possible incompatibility of Port Authority goals and planning with local objectives and plans. Truck traffic to and from the port has been rapidly increasing, and it contributes to traffic congestion, roadway deterioration, and safety conflicts among cars, trucks, bicyclists, and pedestrians.

Local officials have observed an increasing amount of both vehicular and truck traffic towards the Jersey Gardens/port area, and they see the need to separate automobile traffic from trucks. They estimate that the North Avenue corridor, which forms the perimeter of the airport, will reach its operating capacity in 2006.

On the other hand, goods movement is important to the regional and local economy, and NJTPA has identified freight mobility deficiencies and needs in the Elizabeth area. It notes impediments such as functionally obsolete local roads, inadequate intersections, and insufficient roadbeds, and it states that anticipated growth in port activities requires corresponding improvements to enable efficient cargo flows, or else economic development could suffer.

2. Public Transit

Need to Improve Multi-Modal Access to Rail Stations

Given that planned and proposed projects could increase ridership on the Northeast Corridor rail line, there is a need to enhance multi-modal access and connections to the city's two stations. Potential areas for improvement include increasing park-and-ride capacity, increasing connecting bus and shuttle service, and improving pedestrian and bicycle accommodations, e.g., by providing bicycle lockers.

Need to Increase Bus Service

A review of available bus services identified possible needs for new or enhanced services between the city and several areas. The following is a summary of this assessment.

Port/Airport Area

Local officials have stated that the port area is very transit dependent, and they see the need for better service to the Jersey Gardens Mall, particularly during evenings and weekends. The city's Retail Skills Center reports that it receives many job orders for the airport, but lack of transportation for early shifts (some starting as early as 4:00 AM) prevents some people from obtaining jobs.

Regional Employment Centers

Bus routes currently serving the leading regional employment locations have varying service spans and frequencies. The following is a summary of service by location:

- ◆ Newark – Route 24 provides daily service between Elizabeth and Newark; the last evening run to Elizabeth leaves at 1:15 AM. Three local NJ TRANSIT bus routes provide daily service between Elizabeth and Newark. The last evening run for the 40 Route to Elizabeth (Jersey Gardens) is at 10:20 PM, the last run for the 59 Route is at 9 PM, and the last run for the 62 Route (from Penn Station) is at 12 midnight.
- ◆ Union – Two routes provide weekday and Saturday service between Elizabeth and Union. The last evening run to Elizabeth on the 52 Route is at 7:50 PM, and the last run on the 26 Route is at 10:20 PM.
- ◆ Linden – Four routes provide weekday and Saturday service between Elizabeth and Linden. The last evening run to Elizabeth on the 56 Route is at 7:30 PM; the last run and the last run on the 57 Route is at 10:47 PM; the last run on the 62 Route (which also runs on Sundays) is at 11:47 PM; and the last run on the 115 Route is at 12 Midnight.
- ◆ Woodbridge – NJ TRANSIT's 62 Route provides daily service between Elizabeth and Woodbridge Center. The last evening run for Elizabeth leaves at 10:40 PM.
- ◆ Edison – City residents who work in the Raritan Center area in Edison can use the Northeast Corridor commuter rail line between Elizabeth and Metuchen where they can transfer to and from the 813 bus route, which runs on weekdays and Saturdays. The last weekday evening run from Raritan Center is at 10:08 PM.
- ◆ New York City – Four routes provide service between Elizabeth and New York City. One of these routes (111) is oriented towards the Jersey Gardens Mall in Elizabeth. All routes except 115 provide Sunday service. The last weekday evening run from New York to Elizabeth on Routes 112, 113N, and 115 leaves at 11 PM or later.

This review suggests the possible need for later evening and Sunday service on a few routes. Commuter rail, along with connecting bus service, provides another possible commute option to employment locations in Woodbridge and Edison (as well as Newark and New York). The

Northeast Corridor rail line makes weekday and weekend stops at the Metropark, Metuchen, and Edison stations, and the last weekday train from Edison to the Elizabeth station leaves Edison at 1:31 AM. Such reverse commute trips require adequate bus or shuttle service between residential neighborhoods and the Elizabeth rail stations, connecting service between the destination station and worksites, and coordinated schedules between the buses and the trains.

Union County Cross-County Service

Commuter rail service between Elizabeth and points to the west in Union County ended in 1978. Current NJ TRANSIT bus routes, including 58, 59, and 112, provide service between the city and towns such as Roselle, Roselle Park, Kenilworth, Cranford, Clark, and Scotch Plains. Local officials see the need to improve transit access between the city and the rest of the county, and they are promoting a proposed Cross-County rail connection to improve access to jobs for city residents (see Chapter II).

US 22 Corridor

US 22 runs east-west north of the city through other Union County towns including Hillside, Union, and Springfield. The city's new Master Plan identifies the US 22 corridor as a key employment destination for city residents. Existing bus routes (26 and 52) provide some service between Elizabeth and Union in the area of US 22, and some routes (65, 66, 114, 117) provide service roughly along the US 22 corridor, but there appears to be limited ability for Elizabeth residents to use these services to reach key employment locations along US 22. In addition, there are concerns about pedestrian safety and access along this corridor.

Staten Island

NJTPA has identified the need for improved service between Union County towns, including Elizabeth, and Staten Island, and the work on the Goethals Bridge environmental impact statement has identified the possible need to improve transit alternatives between the city and Staten Island.

Need to Improve Facilities

In addition to the potential need for expanded service, public transit requires improved facilities, amenities, and information in order to be a more attractive transportation option. For Elizabeth, the NJTPA Strategy Refinement Study has identified the need to enhance pedestrian access to bus stops, provide appropriate amenities at stops, and improve bus flow. Also, NJ TRANSIT buses serving Elizabeth do not provide the capability to accommodate bicycles.

3. Bicycle/Pedestrian Facilities

Need for Trails/Bicycle Routes

As noted in Section A.3, the city has no trails or greenways for dedicated bicycle or pedestrian use. The proposed East Coast Greenway would run through the northern part of the city, but no existing trails connect with this route. The city's recent Cross-Acceptance report notes the need for more park space to accommodate the population and to capitalize on waterfront potential. Previous studies have inventoried 170 miles of county roads, identifying those suitable for bicycle travel.

Pedestrian Safety Concerns

The NJTPA Strategy Refinement Study has identified issues relating to pedestrian safety along major commercial streets and residential neighborhood streets in Elizabeth. In addition, a special NJDOT pedestrian safety initiative in 2002 identified safety concerns along the US 1&9 corridor, as well as at other locations throughout the city. NJDOT's Bureau of Safety Programs identified several intersections with a high frequency and severity of vehicular/pedestrian accidents.

Another issue common to many cities and towns is the need to ensure safe routes to and from schools.

G. ASSESSMENT OF PROGRESS

The 2001 Urban Supplement recommended transportation improvements in several categories. This section provides information on the progress in implementing these recommendations. The summary shows each recommendation in boldface, followed by a description of its implementation status.

Initiate studies and implement recommended improvements to relieve congestion on major roadways.

- ◆ NJDOT is working on a project to renovate the Elizabeth River Viaduct along US 1&9; this project includes widening the roadway from four to six lanes (see Chapter II for more details). Also, NJDOT awarded a contract in May 2005 to reconstruct and widen US 1&9 between Fairmount Avenue and North Avenue.

Undertake bridge upgrades and replacements and improve pavement conditions

- ◆ Along with the Elizabeth River Viaduct project, NJDOT's current capital program includes projects for replacing the South First Street Bridge over the Elizabeth River and the Magnolia Avenue Bridge over US 1&9 (see Chapter II).

Address and implement safety improvements at high-accident locations

- ◆ A NJDOT pedestrian safety initiative in 2002 focused on a 3-mile stretch of US 1&9 between Park Avenue in Linden and North Avenue in Elizabeth and included some other streets in Elizabeth. The Bureau of Safety Programs developed several projects, including enhanced signal equipment and operations, revised signal timing, and improved signs and striping.
- ◆ The Elizabeth River Viaduct project includes safety improvements at the intersection of US 1&9 with East Jersey Avenue, and the US 1&9 and North Avenue project includes safety improvements at the North Avenue intersection.

Improve access to Union County TDD, Port Newark/Elizabeth, and airport

- ◆ The Kapkowski Road Transportation Planning Study has identified several projects to improve access to the area around the port and airport. (see Chapter II).

Add late evening and/or early morning bus service to accommodate employees who work the second and third shifts on Routes 40, 56/57, 58, and 59

- ◆ The times of the last run to Elizabeth on these routes vary from about 7:30 PM to 11:30 PM. The latter time is the last run from Jersey Gardens Mall on Route 40.

Add weekend service to some bus routes, especially Routes 56/57 and 58

- ◆ These routes have Saturday, but not Sunday, service.

Increase the frequency of some bus routes, especially on Routes 56/57, 59, 112

- ◆ Service frequency varies on these routes; the highest is on 59 (102 weekday trips), and the lowest is on 112 (50 weekday trips). Routes 59 and 112 follow generally the same path through Elizabeth (along Jersey Street and Broad Street). Thus, the service frequency along this corridor is effectively a combination of these two routes.
- ◆ In January 2006, NJ TRANSIT adjusted schedules and added trips on the 111, 112, 113,

and 115 routes, including increasing the frequency of off-peak and Saturday service on Route 115, serving Jersey Gardens.

Add late evening and Saturday service and start Sunday service on Routes 26 and 52

- ◆ On the 26 Route, the last run is at 10:55 PM, there are 10 runs on Saturday, but no Sunday service. On the 52 Route, the last run is at 8:25 PM, there are 20 runs on Saturday, but no Sunday service.

Increase off-peak and morning reverse commute service on Route 113

- ◆ This route provides two morning peak hour runs to Dunellen, and it provides four mid-day runs and six evening runs.

Add bus service to new locations. Investigate ways to serve employment centers.

Monitor bus routes to ensure that bus service meets the needs of employers

- ◆ A new shuttle service was planned to start in January 2006 (see Chapter II).

II. TRANSPORTATION PROJECTS

This section provides information on currently planned or proposed transportation improvement projects for the Elizabeth area. Programming/funding sources include the NJDOT/NJ TRANSIT Transportation Capital Program, the NJDOT Local Aid program, the New Jersey Turnpike Authority, Port Authority of New York and New Jersey, Union County, and the city.

A. ROADS

1. Regional / State Roads

The following projects are on NJDOT's current capital program:

- ◆ Replace the US 1 & 9 Elizabeth River Viaduct. The new roadway will have six travel lanes and two paved shoulders, which will accommodate bicycles and pedestrians. Construction began in 2004, and completion is anticipated in 2007. The project also includes safety improvements at the intersection of US 1&9 and East Jersey Avenue and relocating the city's maintenance yard.
- ◆ Investigate rehabilitation and replacement alternatives for the South 1st Street Bridge over the Elizabeth River. NJDOT recently selected a consultant to prepare the final design for this project.
- ◆ Replace the Magnolia Avenue Bridge over US 1&9. The new structure will have wider travel lanes (15') and two six-foot sidewalks. NJDOT plans to advertise for bids to construct this project in 2006.
- ◆ Provide intersection improvements and streetscaping along Route 82/Morris Avenue, between midtown and west of the Garden State Parkway. NJDOT plans to advertise for bids to construct this project in 2006

An important project on the NJDOT Study and Development Program is a study of the proposed improvements in the Kapkowski Road area, i.e., the area around Turnpike Exit 13, the port, and the airport. The county and city have been designing a major project to improve roadway infrastructure to support growth in this area, particularly to separate vehicular and truck traffic. The Port Authority of New York & New Jersey has allocated \$30 million to advance design. The project has the following two major elements.

- ◆ North Avenue Corridor improvements, including eastbound "flyover" connector from North Avenue to Jersey Gardens Boulevard, expanding the Jersey Gardens Boulevard flyover from Turnpike to a realigned Kapkowski Road and IKEA Drive, and intersection improvements at North Avenue/Division Street/Dowd Avenue.
- ◆ East Grand Street./Trumbull Street. Corridor improvements, including intersection improvements, better defined lanes and parking, and parking restrictions

Table 21: Summary of Roadway Projects in NJDOT Capital Program Pipeline

	Capital Program	TIP	Study and Development
US 1&9 Elizabeth River Bridge	●	●	
South First Street Bridge	●	●	
Magnolia Avenue Bridge	●	●	
Morris Avenue Streetscaping and Intersection improvements	●	●	
Kapkowski Road Study			●

Source: NJDOT Website, Capital Program Documents, November 2005.

The Port Authority has been working on a “Southern Access Roadway Project” to improve access to and from the airport and port area. This project has involved constructing a new ramp and bridge near the airport entrance, widening Brewster Road, and new roads south of the airport.

NJDOT's Portway Initiative is a series of eleven projects designed to improve access between the airport and port, intermodal rail facilities, trucking and warehousing/transfer facilities, and the regional roadway network. These projects will improve goods movement flow between Port Newark/Elizabeth and Jersey City. The Portway Extensions Study identified additional improvement needs and concepts. The proposed projects include improvements at Turnpike Exit 13A, which relate to the Kapkowski Road project, and improvements at Turnpike Exit 13, which relate to access to and from the Goethals Bridge (see below). This study provided a design concept for modifying Exit 13, which would improve access to the Bayway area for development.

Goethals Bridge

The Port Authority is considering alternatives to replace this physically and functionally obsolete bridge; it has proposed building a new bridge south of the existing one. The US Coast Guard currently is directing an environmental impact study, and a draft report is expected in 2007. Local planning officials would like this planning effort to include a comprehensive review of the bridge and its connections with US 1&9, I-278, the Turnpike, and the local roadway network.

In the meantime, the Port Authority is working on a project to replace the lower layers of steel and concrete that support the roadway surface. This project is anticipated to finish in 2009. Also, NJTPA has proposed to deploy intelligent transportation system (ITS) technology and to consolidate tolls to assist in managing traffic flows across the bridge and the surrounding roadway network.

US 1&9 Corridor

Union County has established a Transportation Development District (TDD) along the length of US 1&9 through the county. The primary goal of the TDD Plan is to provide relief to the corridor through strategic transportation investments that will mitigate the impacts of new development. The plan proposes many of the projects referenced above, and it also proposes extending York Avenue to Jersey Gardens. In addition, the plan proposes a high-tech traffic control and traveler information system.

2. Local Circulation

The Kapkowski Road project would affect several local streets in the study area, and the planning study for this project proposes three different levels of wayfinding signage.

The recent NJTPA Strategy Refinement Study recommends establishing truck routing between the ports and the regional roadway network. Such routing would direct trucks away from local streets with low clearances and would complement a similar effort by Newark.

The county is starting a new study to improve goods movement between Port Elizabeth and Tremley Point. The overall objectives are to maximize economic development while minimizing truck traffic. Recommendations for alternative approaches may include new roadway alignments, short haul rail freight, or barge movements.

B. PUBLIC TRANSIT

1. Commuter Rail

NJ TRANSIT's Access to the Region's Core (ARC) project proposes a new trans-Hudson River tunnel, added tracks along the Northeast Corridor (NEC), and connecting the NEC with the Main Line. These improvements will increase capacity for service to New York, accommodate new service, and increase service on existing lines. The US 1&9 TDD plan proposes shuttle buses and vans to connect with the NEC.

The city has received Transit Village designation for the Midtown Station. This designation includes assistance to the city for developing the surrounding area into compact mixed-use neighborhoods.

2. Light Rail

The Newark Rail Link (NRL), previously known as the Newark-Elizabeth Rail Link (NERL), would provide light rail service between downtown Newark, Newark Liberty International Airport, and Elizabeth. The first segment, part of Newark Light Rail, opened in July 2006 and runs between Newark's Broad Street Station and Penn Station. The second segment would run between Penn Station and Camp Street (about one mile), and the third segment was originally proposed to run to the airport station on the NEC and the Elizabeth Station, a distance of about seven miles.

Over time, planning for the third segment has become part of a new project, Union County Rail. Under this project, a 5.8-mile route alignment would run from the airport at Parking Lot D to downtown Elizabeth via Elizabethport, including stops at the Jersey Garden Mall and the new ferry service to Manhattan. This route would include a new multi-modal transportation center in the area near Exit 13A. The design of this center would link the light rail service with the proposed roadway improvements and ferry service. A supplemental draft environmental impact study has been completed for this alignment, and the county is working to assemble right-of-way, but the project has not received funding approval, and its future status is uncertain.

The second component of Union County Rail is a cross-county rail line that would utilize the right-of-way of Conrail's Elizabeth Industrial Track, formerly part of the Central Railroad of New Jersey. In cooperation with Union County, NJ TRANSIT is sponsoring a study of options for new rail service along this corridor. This service would utilize either light rail or diesel multiple unit (DMU) technology. Light rail service could run between the Elizabeth Station and the Cranford Station on the Raritan Valley Line, while DMU service could extend further west to Raritan. Local officials view the new cross-county service as providing a commute alternative to New York City (via NRL and the ferry) for workers who currently use the Raritan Valley Line or Northeast Corridor. The project would greatly enhance the prominence of the Elizabeth Station as a regional intermodal transit hub, while creating related economic development opportunities.

The US 1&9 TDD plan also proposes shuttle bus or van service to connect with new light rail stations.

3. Bus

NJ TRANSIT has initiated a major bus route analysis, addressing potential service needs, covering Elizabeth and Newark.

NJ TRANSIT approved funding through its JARC program for the county to begin a new shuttle service in 2006. Union County identified the demand for services to employment sites and train stations, and it proposed a two-way, modified fixed-route weekday service running from 7:00 AM until 5:30 PM. This service will run from the Elizabeth Train Station to the Union and Linden train stations and extend to the Aviation Plaza in Linden. The shuttle will then continue to the Rahway Train Station. It will make stops within ¼ mile of employment and employment training sites not currently accessible by transit.

Meadowlink is exploring possibilities for expanding its shuttle service from Elizabeth to businesses in the Meadowlands area, and it is considering providing “Night Owl” service for airport employees.

The NJTPA Strategy Refinement Study recommends enhancing pedestrian access to bus stops and improving amenities and information for system users.

4. Aviation

At the airport, the Port Authority is nearing completion of a \$3.8 billion redevelopment program, which has included the extension of the AirTrain system, a second international arrivals facility, modernized passenger terminals, improved airport access, additional parking facilities, expanding roadways, and improved runways and taxiways. The new Port Authority Strategic Plan includes approved funding to modernize both Terminal A and Terminal B, as well as to expand Terminal A and increase parking. It also proposes funding for major airport expansion, as well as for multi-tenant cargo facilities near the airport.

The Strategic Plan also proposes improving transit connections to the airport, including extending PATH from Newark Penn Station to the airport and enhancing rail connections between the airport and the other Port Authority airports, JFK and LaGuardia.

5. Ferry

The NJDOT capital program includes funding coming from a \$9.5 million federal grant to build a terminal for a new ferry service between Elizabeth and Lower Manhattan. The county will construct and maintain the facilities, including slips for two ferries, a passenger waiting area, and a parking lot with about 1,000 spaces. Other related improvements include a temporary ticket office, temporary tent shelter, waterfront boardwalk, and various site improvements including walkways, benches, and a pavilion. The service plan will provide 30-minute headways during peak hours and 60-minute headways at other times. The projected ridership is 1,000-1,200 per day. The county anticipates that the ferry service will eventually connect to the NRL light rail line and the proposed Cross County Rail Link, which would provide an alternative commute option for New York City employees.

C. BICYCLE/PEDESTRIAN FACILITIES

1. Trails/Bicycle Routes

Plans are underway for an Elizabeth River trail extending from Broad Street to Arthur Kill. The first phases of the trail would run 1.5 miles from Broad Street to Mattano Park, and a later phase would extend to Arthur Kill. The new federal transportation legislation includes funding for this project. Another pending project is a “bike, hike, and roll” trail at the waterfront; construction is scheduled for spring 2006.

The county will be starting to work on a bicycle master plan in 2006. A key objective of this plan will be to propose a county bikeway system that includes links to the proposed East Coast Greenway.

2. Pedestrian Enhancements

The city has established a comprehensive pedestrian safety program called “Walk Smart – Drive Smart Elizabeth,” which includes physical improvements, along with education and enforcement. As part of this effort, the city has created a Task Force and has worked closely with the NJ Division of Highway Safety to identify key needs and projects.

A special NJDOT pedestrian safety initiative in 2002 identified safety concerns and improvement concepts along the US 1&9 corridor, as well as at other locations throughout the city. Several projects have been completed, and others are in the planning stages.

The NJTPA Strategy Refinement Study proposes pedestrian safety treatments and traffic calming along key commercial streets (including Broad Street, Elizabeth Avenue, and Jersey Street) and residential neighborhood streets. These treatments may include textured crosswalks, curb bulb-outs, and enhanced pedestrian signals.

3. Streetscaping Projects

The city has several planned or proposed streetscaping projects. In 2005, the city received \$1 million in state Urban Enterprise Zone (UEZ) funding for a third phase of the Elizabeth Avenue streetscape project, along with \$1.6 million for an elaborate streetscape beautification project along Broad Street in the Historic Elizabeth Special Improvement District. These projects are under design. Another project, the “Elizabeth Gateway” project along East Jersey Street, is nearing the start of construction.

NJDOT’s Morris Avenue project includes streetscaping improvements, and the Midtown Redevelopment District Plan proposes streetscaping. Other similar projects include Elmora Avenue, Phase II, and the Hope VI Community Center.

In addition, Groundwork Elizabeth, a non-profit organization, is working with public agencies on streetscaping/beautification projects, including Wilson Park and “triangle” projects including the North Broad Street station area and Lidgerwood/Washington. Another non-profit organization, Future City, has been working to advance open space and recreational opportunities, especially relating to the river.

D. GOODS MOVEMENT

1. Port Improvements

The Port Authority is conducting a channel dredging project to allow larger ships to use Port Elizabeth and Port Newark. Recent projects deepened the Kill Van Kull and Newark Bay to 45 feet, and work began in 2005 to deepen them to 50 feet. It is estimated that the 50-foot depth will enable ships to double their loads.

In addition, the Port Authority is managing a port facility redevelopment project, which includes reconfiguring the two major terminals and completing the ExpressRail facility. Two new tracks will open in 2006, and another eight are in planning stages. The completed facility will have grade-separated dual lead tracks over McLester Street, providing direct access to and from the Maher and APM terminals, along with an expanded Corbin Street support yard.

The Port Authority also is working with the Norfolk Southern and CSX railroads to improve the regional rail network and the port's access to this network. For example, work has begun on a connection between the Chemical Coast Line and the Staten Island Railroad, and one study has proposed to double-track the Chemical Coast Line.

The NJDOT Capital Program includes a pilot program, using federal funding to test "Cargomate," an ITS application for tracking containers, truck chasses, generators, drayage tractors, and other items used in shipping operations.

In addition to the road projects described in Section A, the New Jersey Turnpike Authority has been working on a project of extensive improvements to Exit 12, south of the city. This project includes reconfiguring the ramps and constructing a new road to provide direct access between the exit and Tremley Point, thereby improving goods flow. The Turnpike anticipates preparing the contract for award in 2007. The county will be conducting a new study to further explore access issues between Port Elizabeth and Tremley Point.

2. Local Rail Freight Service

Union County has been working to re-activate local freight service on the Staten Island Railroad (SIRR), which runs through Elizabeth, along with the connecting Rahway Valley Railroad, which runs north of the city, and NJDOT recently approved funding to complete work on the segment between Linden and Cranford. While these projects have encountered some local opposition, the county anticipates that they will help to reduce roadway congestion and improve safety

III. RECOMMENDATIONS

Based upon the analysis and findings of this report, the following section presents recommendations for transportation improvements.

A. ROADS

Improve the interface between Elizabeth and the regional road network

- ◆ NJDOT, the New Jersey Turnpike Authority, the Port Authority of New York and New Jersey, the county, and the city should work together to prepare roadway design to improve connectivity between Turnpike Exit 13, I-278, US 1&9, and local streets. The Port Authority should incorporate desired design elements in planning for the new Goethals Bridge.
- ◆ The Port Authority, NJDOT, and the Turnpike Authority should consider short-term efforts to improve traffic flow in the area of the Goethals Bridge, including possibly using intelligent transportation system (ITS) technology.
- ◆ NJDOT should advance the planned projects for roadway improvements in the area around Turnpike Exit 13A, including Kapkowski Road and North Avenue.
- ◆ The Turnpike Authority should review and address the Exit 13 and 13A toll differential issue.
- ◆ All agencies should review directional signage needs and provide appropriate signs. This review should include considering the possibility of gateway treatments at key entrances to the city along major highways.

Address key congestion points along regional roadways

- ◆ NJDOT should ensure completing the US 1&9 Elizabeth River Viaduct project in a timely manner.
- ◆ NJDOT should initiate studies, in collaboration with the city, to identify and evaluate alternatives for improving traffic flow along Route 27 and Route 439 in the city.
- ◆ The Port Authority should advance planning for the new Goethals Bridge project.

Address sub-standard pavement and bridge conditions

- ◆ NJDOT should identify, design, and implement projects to address bridge repair and pavement improvement needs, particularly along US 1&9 and Route 27.

Provide safety improvements at high-accident locations

- ◆ NJDOT, working with the county and city, should complete projects that previous studies have proposed for high-accident locations along US 1&9 and local streets.

Improve local circulation

- ◆ The city should plan and implement an enhanced and integrated wayfinding system for the local street network.
- ◆ The city should identify preferred local truck routes and install appropriate signage and directions.
- ◆ The city should work with railroads to address the issue of substandard overpasses

Address parking needs

- ◆ The city should plan and implement a comprehensive parking management strategy including new structures and strict enforcement of on-street parking regulations, among other measures.

Upgrade local streets and bridges

- ◆ The city should advance design and implementation of projects for which it has received NJDOT Local Aid funding.
- ◆ The city should identify and prioritize additional local street and bridge repair needs.

B. PUBLIC TRANSIT

Enhance commuter rail service

NJ TRANSIT should assess the potential benefits of expanding passenger rail service and determine whether to allocate limited public funding for such service.

- ◆ NJ TRANSIT should plan for increased service along the Northeast Corridor, which will require addressing the issue of trans-Hudson commuter rail capacity. Such planning should enhance and promote multi-modal connections to the train stations. These linkages should include connecting bus or shuttle service, pedestrian paths, bicycle facilities including lockers, and park-and-ride areas.
- ◆ The city and NJ TRANSIT should maintain and strengthen efforts to use the Elizabeth and North Elizabeth stations to enhance residential and business opportunities in the areas surrounding the stations. These efforts should ensure that stations are integrated functionally and visually with nearby development and redevelopment, and ensure that new development near stations enhances the use of existing transit service.
- ◆ NJ TRANSIT should continue with detailed studies of the feasibility of the Newark Rail Link (MOS-3) and a proposed Cross-County rail line. These studies should incorporate a multi-modal transportation center, which a recent NJTPA study proposed, in the port area, as well as appropriate physical and service connections to the new ferry that the county is planning.
- ◆ In planning for new rail service, NJ TRANSIT and local officials should develop plans for the station areas to have adequate multi-modal connections and provide potential transit-oriented development opportunities, including a concept for a major multi-modal transit hub at Elizabeth Station.
- ◆ The Port Authority of New York and New Jersey should complete its planned study of extending PATH from Newark to Newark Liberty International Airport and study other possible new rail links to the airport, as proposed in its new Strategic Plan.

Maintain and enhance local bus service

- ◆ NJ TRANSIT should advance its planned analysis of the Elizabeth and Newark bus routes and assess the feasibility of expanded or new service. Based upon this study, NJ TRANSIT should consider available resources and whether to allocate additional resources for increased bus service.
- ◆ NJ TRANSIT should maintain and expand, as possible within funding limitations, local fixed-route bus service. Expanded service could include more late evening, weekend, and express bus service between the city and key regional employment locations. These locations (indicated by reviewing current routes / schedules and speaking with local

officials) include the port/airport area; points south along US 1, and along US 22.

- ◆ NJDOT should complete its review of issues related to bus stop location and pedestrian safety and access along US 22 and move toward implementing preferred improvements.
- ◆ NJ TRANSIT should promote and enhance rail-bus commute options, particularly through scheduling, fares, and transfers. NJ TRANSIT and local agencies should promote the NJ TRANSIT policy that allows holders of monthly rail passes to ride local buses for free.
- ◆ NJ TRANSIT should continue efforts to upgrade system facilities and amenities, including bus stops, shelters, sidewalks, bicycle racks, schedules, and fare information, especially those improvements that NJTPA's Strategy Refinement Study has proposed.
- ◆ The county should implement and closely monitor the performance of the new JARC-funded shuttle service. The county and other local agencies should explore opportunities for other similar services and seek to obtain greater employer participation in and sponsorship of such services. These efforts should build upon existing efforts of the Meadowlink TMA in this regard, including ridematching and ridesharing activities.
- ◆ The county should coordinate with NJ TRANSIT or other local transit agencies to provide connecting bus or shuttle service to the new ferry.
- ◆ As part of its airport expansion plans, the Port Authority of New York and New Jersey should evaluate the need and opportunity for connecting bus service, and it should work with NJ TRANSIT and other local transit agencies to plan for expanded or new service.

C. BICYCLE AND PEDESTRIAN

Conduct planning for trails and bicycle routes

- ◆ The city should advance the planning and implementation of the Elizabeth River trail.
- ◆ The city and county should work to identify potential links to connect with the Elizabeth River trail and with the East Coast Greenway and to identify other potential new park/greenway opportunities.
- ◆ The county should complete its new bicycle master plan and work on implementing the proposed bikeway plan.
- ◆ The city should work with the county and NJDOT to improve on-road bicycle facilities and develop a connected network of on-road and off-road facilities. These efforts should include providing adequate bicycle parking and other amenities at key destinations and improving public information and education, e.g., maps of routes and facilities.
- ◆ NJ TRANSIT should provide and promote "bikes on buses" capabilities and other amenities to improve multi-modal bike-bus connections, e.g., bike racks at bus stops and bike lockers at commuter rail and light rail stations.

Improve pedestrian access and safety

- ◆ The city should continue the work of its pedestrian task force and implement planned and proposed improvement projects.
- ◆ The city should implement traffic calming measures and other pedestrian enhancements along major commercial corridors and neighborhood streets, especially those that the NJTPA Strategy Refinement Study proposed. Improvements in residential neighborhoods should include "safe routes to schools" plans.
- ◆ The city and its special improvement districts should expedite planned and proposed streetscape projects. The city should seek to incorporate streetscaping improvements into

redevelopment efforts along other corridors and require such improvements as part of all new development and redevelopment projects.

D. GOODS MOVEMENT

- ◆ The Port Authority of New York and New Jersey should advance key goods movement projects, including channel dredging, port facility improvements, and rail system improvements.
- ◆ The Port Authority and other public and private stakeholders should identify other goods movement needs, relating to the local roadway network, such as road and bridge capacities, intersection capacities, and clearance capacities.
- ◆ The Port Authority should coordinate its activities with local agencies, in order to balance local roadway improvement needs with a careful assessment of the impacts of the various planned and proposed port projects upon the local transportation network and land uses, and adjust its plans to mitigate these impacts.
- ◆ The county should work to address all local concerns regarding start up of new short line rail freight.

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