



New Jersey's Long-Range Transportation Plan

For Public Discussion
September 2008

URBAN SUPPLEMENT REPORT **City of Trenton**

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

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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 also has 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 Trenton 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 Delaware Valley Regional Planning Commission (DVRPC), the City of Trenton Planning Division, the city's Department of Public Works, the city's Department of Health and Human Services, the Mercer County Workforce Investment Board, the county Planning Division, and the Greater Mercer TMA.

The process also involved reviewing reports, information, and data from several agencies, including the US Census, NJ Department of Labor, NJDOT, NJ TRANSIT, DVRPC, and the Delaware River Joint Toll Bridge Commission (DRJTBC). Key municipal planning documents reviewed include the Master Plan Re-Examination, the Comprehensive Economic Development Strategy (CEDS), the Transportation Master Plan, and the Station Linkage Plan.

I. TRANSPORTATION AND DEMOGRAPHIC CONDITIONS

A. EXISTING TRANSPORTATION NETWORK

1. Roads

Regional/State Roads

The major regional/state roads serving the Trenton area are I-95, I-195, I-295, US 1, US 206, Route 29, Route 31, Route 33, and Route 129 (see Map 1). I-95, I-295, and Route 29 effectively form a beltway around the city of Trenton. The area where I-195, I-295, Route 29, and Route 129 converge, just south of the city, has been referred to as the “Trenton Complex.”

The following key roads run through Trenton:

- ◆ US 1 is a major north-south arterial, which runs as a four-lane limited access roadway 3.2 miles through the city. The Delaware River Joint Toll Bridge Commission (DRJTBC) has jurisdiction for the river bridge crossing and 0.6 miles of the road into Trenton.
- ◆ US 206 is a north-south arterial. Most of this route within the city is under city or county jurisdiction.
- ◆ Route 29 starts at the interchange of I-195 & I-295 just south of the city and runs north-south along the eastern shore of the Delaware River. North of the Northeast Corridor railroad bridge, Route 29 is part of a Scenic Byway designated by NJDOT.
- ◆ Route 31 starts at the Battle Monument in the city and runs north-south. Within the city, the road is under county jurisdiction.
- ◆ Route 33 starts at US 1 and connects the city with points to the east. For most of its route through the city, the road is under county jurisdiction.
- ◆ Route 129 runs north-south for 2.4 miles, connecting US 1 with Route 29 near the interchange of I-195 & I-295.

County Roads

The local roadway network includes several roads under Mercer County jurisdiction, including Route 579 (Sullivan Way), Route 606 (Hamilton Avenue), Route 622 (Olden Avenue), Route 626 (Chambers Street), Route 634 (Parkway Avenue), Route 635 (East State Street), Route 636 (Parkside Avenue), Route 650 (Lalor Street), and Route 653 (Calhoun Street).

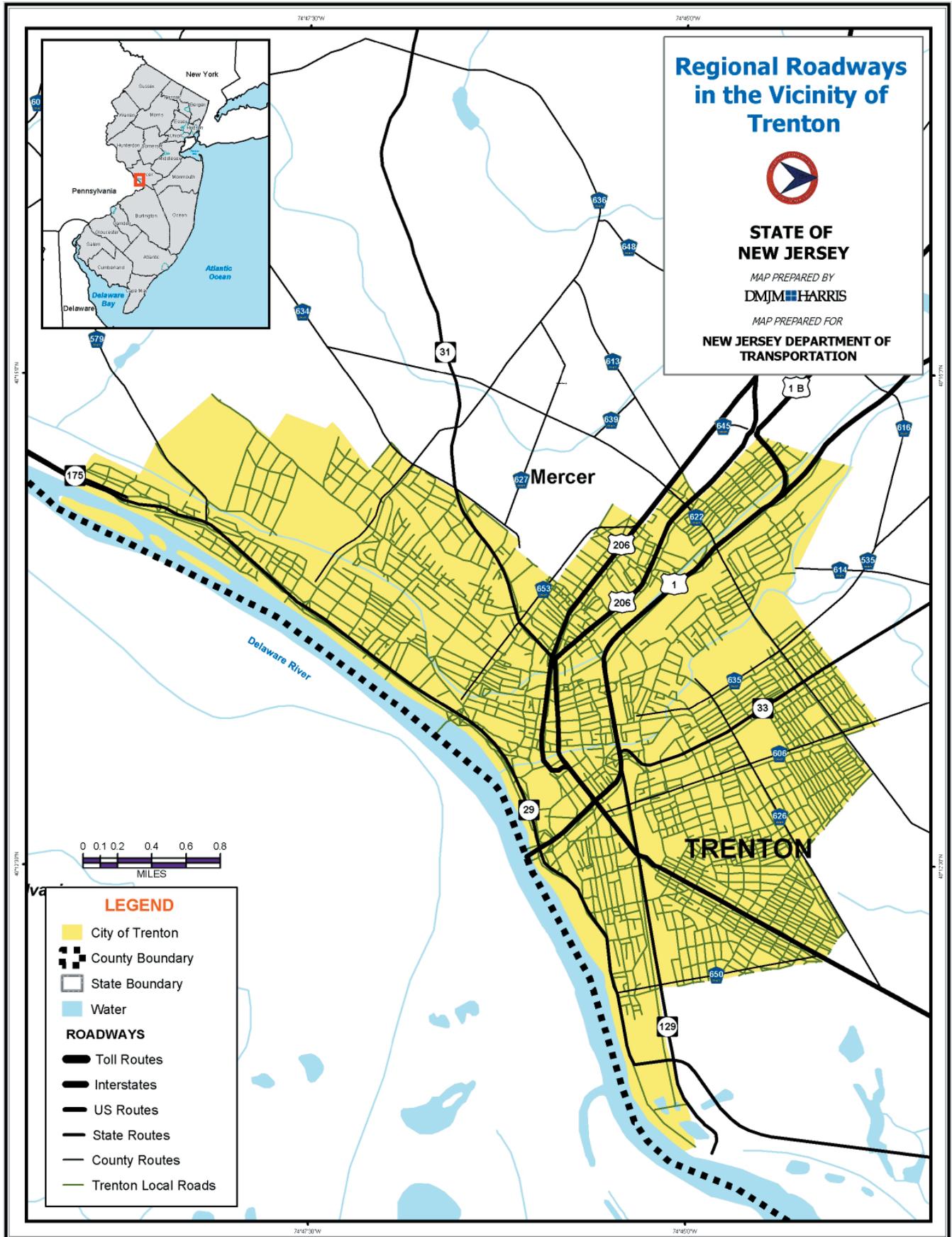
Municipal Streets

Major municipal streets within the city include State Street, Market Street, Perry Street, Prospect Street, and Clinton Avenue.

Bridges

Three bridges cross the Delaware River between Trenton and Morrisville, PA. These bridges, all under the jurisdiction of DRJTBC, are the Trenton-Morrisville US 1 toll bridge, the Lower Trenton, or “Trenton Makes,” bridge and the Calhoun Street Bridge. Several other bridges cross US 1, the Northeast Corridor rail line, the Assunpink Creek, and the old Delaware & Raritan Canal.

Map 1: Road Network



2. Public Transit

Rail Service

Trenton has good access to rail passenger service, including AMTRAK, NJ TRANSIT's Northeast Corridor line, the Southeastern Pennsylvania Transit Authority's (SEPTA) regional rail service, and NJ TRANSIT's new River LINE light rail service. NJ TRANSIT owns and operates Trenton Station, originally built in 1891 and renovated to its current configuration in 1972. The station is the fourth busiest in the state, serving almost 5,900 NJ TRANSIT commuter rail riders and 1,650 AMTRAK passengers on an average weekday. Two large parking garages near the station provide over 3,000 parking spaces. More details are provided below:

- ◆ AMTRAK service provides 55 trains per weekday to and from Trenton. Total annual ridership to and from Trenton is over 400,000, making Trenton station the second busiest AMTRAK station in New Jersey. The leading origin/destination cities for Trenton are New York City and Washington, DC.
- ◆ NJ TRANSIT's Northeast Corridor line provides local service between Trenton and New York City. Other major stops on this line are Princeton Junction, New Brunswick, Metropark, Newark Liberty International Airport, and Newark Penn Station.
- ◆ SEPTA's R-7 Regional Rail line provides local service between Trenton and Philadelphia.
- ◆ The new River LINE light rail service provides service between Trenton and Camden, with connecting transit service to Philadelphia.

Bus Service

NJ TRANSIT provides several fixed-route bus services in Trenton and the surrounding area. These routes have evolved from the city's old streetcar system, and they are generally oriented to the downtown area. Most routes also serve the train station, and most residential neighborhoods have bus service within a few blocks.

The NJ TRANSIT bus routes currently serving the city of Trenton are 409, 600, 601, 602, 603, 604, 606, 607, 608, 609, 610, and 611 (see Map 2). These routes provide over 700 trips per weekday, along with some Saturday and Sunday service. The median weekday ridership on the 600 routes is just over 15,000, which is the same as the 2000 ridership.

Other Services

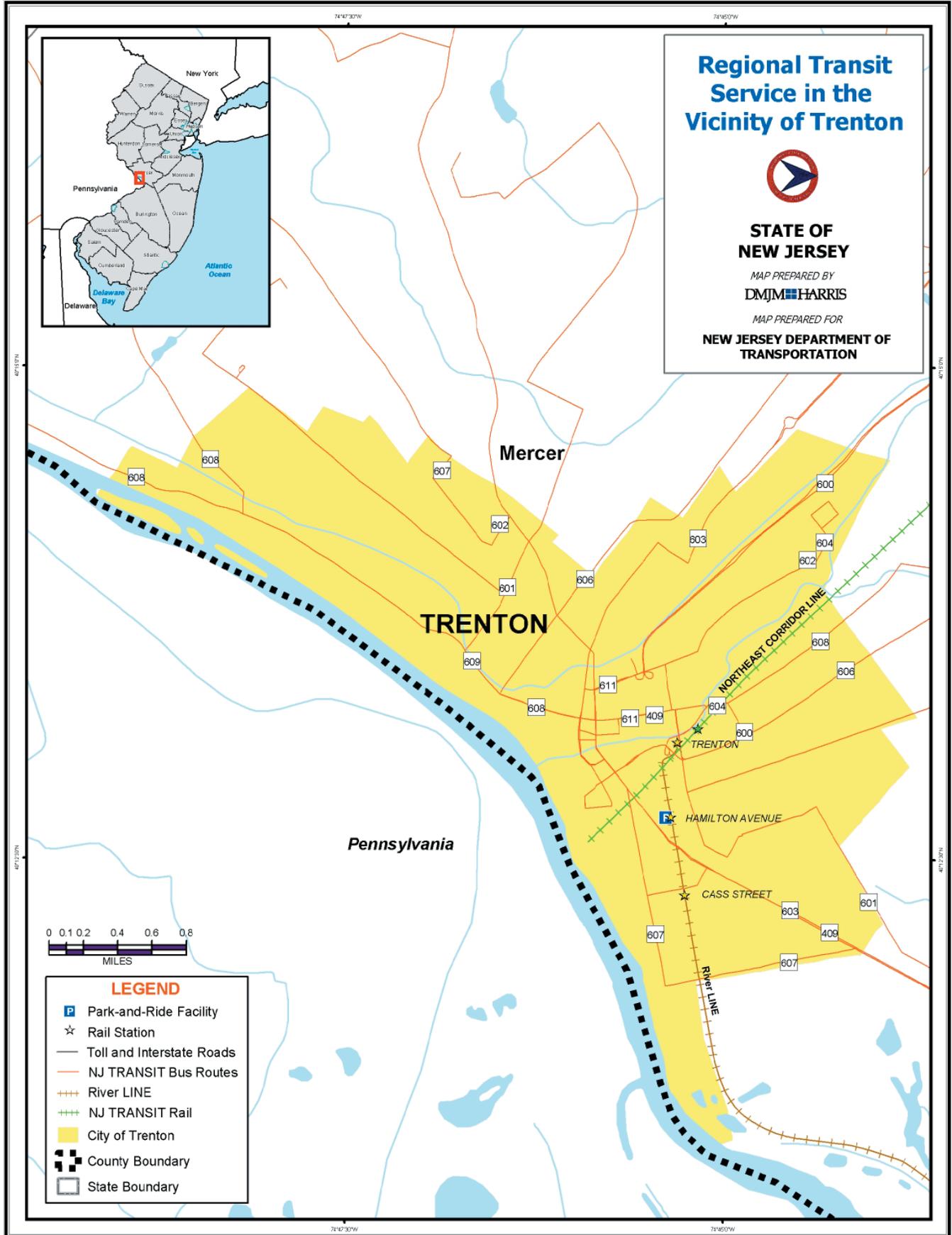
City residents have several other transit options, including the following:

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.

Mercer County operates the Route 130 Connection, a shuttle that currently runs between the Hamilton Train Station and the Exit 8A area of the NJ Turnpike.

Mercer County's TRADE (Transportation Resources to Aid the Disadvantaged and Elderly) program provides free van service for the elderly, disabled, and economically disadvantaged. It provides subscription trips to employment, dialysis, nutrition sites, rehabilitation sites, radiation, etc., on an ongoing basis, along with trips to doctors' appointments, out-patient clinics, beauty parlors, or shopping on an as-needed basis.

Map 2: Public Transit Network



3. Bicycle and Pedestrian

The city has several trails available for pedestrian and bicycle use. These trails include the following:

- ◆ Delaware and Raritan Canal State Park – The towpath of the old Delaware & Raritan Canal provides a trail with two segments in Trenton. The first segment runs about 3.5 miles between the Ewing and Old Rose Street. The second segment runs about 0.5 miles between Mulberry Street and Lawrence.
- ◆ Stacy Park – This park includes a paved trail that runs about 1.3 miles between the water treatment plant near the Calhoun Street Bridge and the Island neighborhood.
- ◆ South Riverwalk Park – Developed as mitigation for the Route 29 Tunnel project, this 6.5-acre park includes a bikeway/pedestrian walkway and esplanade.

4. Goods Movement

I-95, I-195, and I-295 are all part of the National Network for truck routes.

The city has two active rail freight lines that provide limited service to city businesses. Conrail provides local freight service along Amtrak's Northeast Corridor between Newark and Trenton, and the Bordentown Secondary runs between Camden and the Northeast Corridor line in Trenton. It is part of the Conrail Shared Assets Operation.

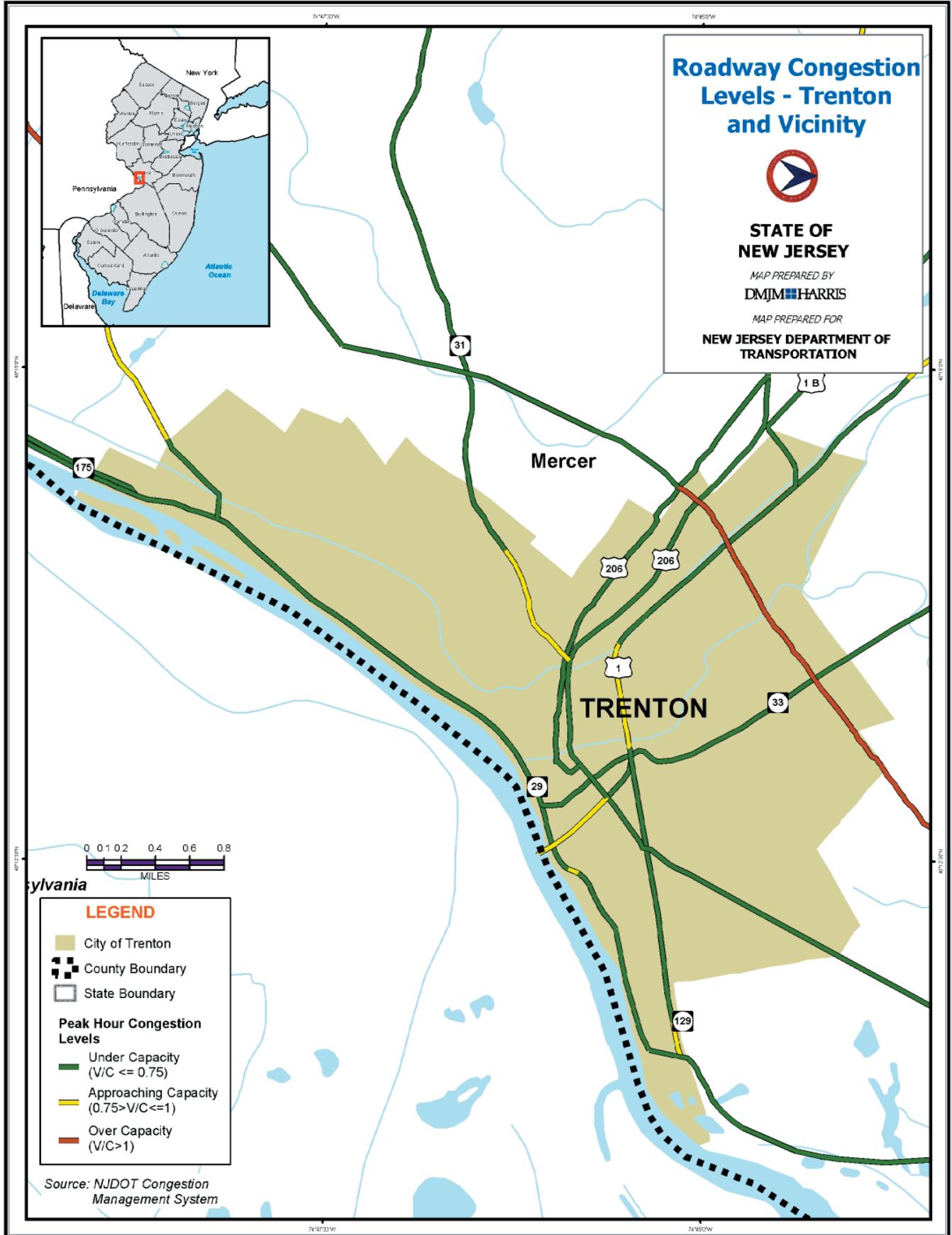
B. SYSTEM PERFORMANCE

1. Road Congestion

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 traffic flow on the roadway is already poor and future development would make it worse. Map 3 shows the 2005 congestion levels for roadways in the Trenton area. Based upon this map, the only congested roadway segment is Olden Avenue, which is a county road. Segments approaching congestion conditions include portions of US 1, Route 29, and Route 31.

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, 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 Trenton, rated by the SDI, in 2004. Nearly all roads have “fair” or better pavement conditions.

Table 1: Trenton Pavement Condition Summary by SDI

| Facility | Total Pavement Miles (Both Directions) | Very Good SDI > 4 | Good 4 > SDI > 3 | Fair 3 > SDI > 2 | Poor 2 > SDI > 1 | Very Poor SDI < 1 |
|----------|----------------------------------------|----------------------|---------------------|---------------------|---------------------|----------------------|
| 1 | 5.2 | 4.4 | 0.0 | 0.6 | 0.2 | 0.0 |
| 1B | 0.8 | 0.4 | 0.1 | 0.1 | 0.2 | 0.0 |
| 29 | 10.4 | 6.0 | 2.4 | 2.0 | 0.0 | 0.0 |
| 129 | 4.8 | 1.2 | 0.8 | 2.1 | 0.7 | 0.0 |
| Total | 21.2 | 12.0 | 3.3 | 4.8 | 1.1 | 0.0 |
| % | 100% | 56.6% | 15.6% | 22.6% | 5.2% | 0.0% |

Source: NJDOT, Pavement Management System.

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 Trenton, rated by the IRI, also in 2004. The data show that most roads have “good” to “fair” pavement conditions, but about one-third of roads have deficient pavement.

Table 2: Trenton Pavement Condition Summary by IRI

| Facility | Total Pavement Miles (Both Directions) | Good | Fair | Deficient |
|----------|----------------------------------------|------|------|-----------|
| 1 | 5.2 | 0.9 | 3.3 | 1.0 |
| 1B | 0.8 | 0.0 | 0.0 | 0.8 |
| 29 | 10.4 | 1.1 | 5.6 | 3.7 |
| 129 | 4.8 | 0.3 | 2.7 | 1.8 |
| Total | 21.2 | 2.3 | 11.6 | 7.3 |
| % | 100% | 11% | 55% | 34% |

Source: NJDOT, Pavement Management System.

3. Bridge Conditions

NJDOT employs a Bridge Management System (BMS), which maintains an inventory of every bridge with a span over 20 feet, listing the physical characteristics, condition and ownership of the bridge. The bridges are rated for their structural condition as well as functional characteristics. Information on structural condition is also combined with bridge size and roadway type to help determine priorities for bridge improvement projects.

Of the 66 bridges in Trenton, nearly 60% 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 |
|----------|----------------------|------------------------|-----------------------|--------------------------|--------------------|
| Trenton | 66 | 16 | 23 | 39 | 59% |
| 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 in Trenton with the highest crash rates in 2004.

Table 4: State Road Segments with Highest Crash Rates

| Road | Location | Length | Crashes | Rate |
|----------|-------------------------------------------|--------|---------|-------|
| Route 29 | Near Calhoun Street | .04 | 34 | 62.46 |
| US 206 | Between Spruce and Mulberry Streets | .25 | 41 | 46.38 |
| US 206 | Between Mulberry St. and Brunswick Circle | .26 | 18 | 19.58 |
| Route 33 | Between US 1 and railroad bridge | .11 | 9 | 17.91 |

Source: NJDOT, Bureau of Safety Programs

C. DEMOGRAPHIC PROFILE

This section provides a summary of demographic characteristics for Trenton. It examines trends over the past 20 years and compares trends for the city, county, and state.

1. Population

Between 1990 and 2000, the city's population continued to decline, decreasing 4%, while the county and state had population increases (see Table 5). Nonetheless, the city's rate of population decrease was less than that between 1950 and 1980, when the rate of population decrease averaged 10% over each 10-year period.

Table 5: Total Population – Trenton, Mercer County, New Jersey, 1980 – 2000

| | 1980 | 1990 | 2000 | Change 1990-2000 | |
|---------------|-----------|-----------|-----------|------------------|---------|
| | | | | Number | Percent |
| Trenton | 92,124 | 88,675 | 85,403 | -3,272 | -3.7% |
| Mercer County | 307,863 | 325,824 | 350,761 | 24,937 | 7.7% |
| 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 age distribution of the city's population is slightly different from those of the county and state (see Table 6). The city has a somewhat higher percentage of population under the age of 19 and a somewhat lower percentage over the age of 65. Between 1990 and 2000, while the county and state's median age increased, the city's median age decreased.

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

| | 1980 | 1990 | 2000 |
|--------------------|-------|-------|-------|
| <5 Years | | | |
| Trenton | 7.7% | 8.6% | 7.6% |
| Mercer County | 5.9% | 6.7% | 6.3% |
| New Jersey | 6.3% | 6.9% | 6.7% |
| 5-19 Years | | | |
| Trenton | 24.7% | 22.1% | 22.7% |
| Mercer County | 23.9% | 19.3% | 21.0% |
| New Jersey | 24.2% | 19.1% | 20.4% |
| 20-64 Years | | | |
| Trenton | 55.0% | 57.7% | 58.3% |
| Mercer County | 58.8% | 61.0% | 60.2% |
| New Jersey | 57.8% | 60.6% | 59.7% |
| 65+ Years | | | |
| Trenton | 12.6% | 11.6% | 11.4% |
| Mercer County | 11.4% | 13.0% | 12.5% |
| New Jersey | 11.7% | 13.4% | 13.2% |
| Median Age | | | |
| Trenton | 31.3 | 33.2 | 32.2 |
| Mercer County | 32.3 | 33.8 | 36.0 |
| 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

Trenton experienced a shift in its racial and ethnic composition during the 1990s (see Tables 7 and 8). The percentage of non-white population increased from 58% to 67% during that decade, and the percentage of Hispanic population increased from 14% to 22%. By comparison, the Mercer County has a 32% non-white and 10% Hispanic population, and the state has a 27% non-white and 13% Hispanic population.

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

| | 1990 | 2000 |
|---------------|-------|-------|
| White | | |
| Trenton | 42.2% | 32.6% |
| Mercer County | 75.1% | 68.5% |
| New Jersey | 79.3% | 72.6% |
| Black | | |
| Trenton | 49.3% | 52.1% |
| Mercer County | 18.9% | 19.8% |
| New Jersey | 13.4% | 13.6% |
| Other* | | |
| Trenton | 8.5% | 15.3% |
| Mercer County | 6.0% | 11.7% |
| New Jersey | 7.3% | 13.8% |

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

* Notes: "Other" includes Asian, Pacific Islander, American Indian, & 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 |
|---------------|------|------|
| Trenton | 14% | 22% |
| Mercer County | 6% | 10% |
| New Jersey | 10% | 13% |

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

4. Income and Poverty

Median household income in Trenton increased by 21% in the 1990s, but this increase was lower than 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 1990s, and the city's poverty rate is much higher than that of the county or state.

Table 9: Income and Poverty, 1979-1999

| | 1979 | 1989 | 1999 | Change 1989-1999 | |
|------------------------------------------|----------|----------|----------|------------------|---------|
| | | | | Number | Percent |
| Median Household Income | | | | | |
| Trenton | \$12,182 | \$25,719 | \$31,074 | \$5,355 | 20.8% |
| Mercer County | \$32,942 | \$41,227 | \$56,613 | \$15,386 | 37.3% |
| New Jersey | \$33,178 | \$40,927 | \$55,146 | \$14,219 | 34.7% |
| % Individuals Below Poverty Level | | | | | |
| Trenton | 21.2% | 18.1% | 21.1% | | |
| Mercer County | NA | 7.4% | 8.2% | | |
| 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 household vehicle ownership did not increase in Trenton between 1990 and 2000, and it remains well below the rates for the county and state (see Table 10). For the city, 70% of households have one or no vehicles, compared to a statewide average of 48%.

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

| | 1980 | 1990 | 2000 |
|---------------|------|------|------|
| Trenton | 66.4 | 69.2 | 69.2 |
| Mercer County | 85.0 | 87.4 | 89.3 |
| New Jersey | 85.2 | 87.1 | 87.3 |

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

6. Labor Force

The number of employed residents in Trenton decreased substantially between 1990 and 2000 (see Table 11). This trend reflects a decrease in the total number of persons aged 16 or over and a decrease in the labor force participation rate.

Table 11: Employed Residents, 1980–2000

| | 1980 | 1990 | 2000 | Change 1990-2000 | |
|---------------|-----------|-----------|-----------|------------------|---------|
| | | | | Number | Percent |
| Trenton | 34,495 | 37,616 | 32,470 | -5,146 | -13.7% |
| Mercer County | 142,808 | 166,432 | 166,647 | 215 | 0.0% |
| 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 for Trenton decreased slightly 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 |
|---------------|--------------|--------------|--------------|
| Trenton | 10.2 | 10.9 | 10.5 |
| Mercer County | NA | 5.2 | 7.9 |
| New Jersey | 7.2 | 5.7 | 5.8 |

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

8. Employed Residents by Industry

Table 13 shows the number of employed city residents who work in different industrial sectors. Most of the labor force works in service industries; only 15% work in manufacturing or construction.

Table 13: Resident Employment by Industrial Sector – Trenton, 2000

| Industry | Number | Percent |
|-------------------------------------------------------------------------------------|--------|---------|
| Agriculture, forestry, fishing and hunting, and mining | 99 | 0.3 |
| Construction | 1,929 | 5.9 |
| Manufacturing | 2,993 | 9.2 |
| Wholesale trade | 889 | 2.7 |
| Retail trade | 3,005 | 9.3 |
| Transportation and warehousing, and utilities | 1,774 | 5.5 |
| Information | 886 | 2.7 |
| Finance, insurance, real estate, and rental and leasing | 1,436 | 4.4 |
| Professional, scientific, management, administrative, and waste management services | 3,414 | 10.5 |
| Educational, health and social services | 7,206 | 22.2 |
| Arts, entertainment, recreation, accommodation and food services | 2,749 | 8.5 |
| Other services (except public administration) | 1,727 | 5.3 |
| Public administration | 4,363 | 13.4 |

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

9. Employed Residents by Occupation

Table 14 shows the number of employed residents who hold different occupations. The percentage of city workers in “Management, Professional, and Related Occupations” (22%) is considerably less than that for the county (43%) or state (38%).

Table 14: Resident Employment by Occupation – Trenton, 2000

| Occupation | Number | Percent |
|-------------------------------------------------------------|--------|---------|
| Management, professional, and related occupations | 6,980 | 21.5 |
| Service occupations | 8,390 | 25.8 |
| Sales and office occupations | 8,973 | 27.6 |
| Farming, fishing, and forestry occupations | 99 | 0.3 |
| Construction, extraction, and maintenance occupations | 2,731 | 8.4 |
| Production, transportation, and material moving occupations | 5,297 | 16.3 |

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

10. Journey to Work – Resident Labor Force

In 2000, 37% of Trenton’s resident labor force worked in the city, a decrease from a rate of about 50% in 1990. Nearly 20,000 city residents work in locations outside the city (see Table 15). Approximately 28% work in the inner suburbs (Hamilton, Ewing, and Lawrence), and another 14% work elsewhere in Mercer County, for a total percentage of 80% of city residents working in the county. This percentage is down from 87% in 1990. Other current significant

employment locations for city residents are Bucks County, Pennsylvania, and Middlesex and Burlington counties.

Table 15: Location of Employment – Trenton Residents, 2000

| County | Municipality | Number | Number | Percent | Percent |
|------------|----------------------|--------|--------|---------|---------|
| Mercer | | 25,173 | | 80% | |
| | Trenton | | 11,651 | | 37% |
| | Hamilton | | 4,000 | | 13% |
| | Lawrence | | 2,259 | | 7% |
| | Ewing | | 2,575 | | 8% |
| | Princeton Borough | | 1,401 | | 4% |
| | West Windsor | | 1,316 | | 4% |
| | Other | | 1,971 | | 6% |
| Bucks, PA | | 1,612 | | 5% | |
| Middlesex | | 1,377 | | 4% | |
| Burlington | | 867 | | 3% | |
| Other | | 2,335 | | 7% | |

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

In 2000, over 40% of resident workers used modes other than single-occupancy vehicles as their primary commute mode, compared to 27% in the county and state. The share of commuters using public transit as their preferred mode was 12%, compared to 7% for the county and 10% for the state.

The average commute time for all workers who did not work at home was 24 minutes in 2000.

11. Employment in the City

Total covered employment in Trenton (including private sector, federal government, and local government jobs) in 2003 was 30,790, which was a 12% increase from 1998. The leading private-sector industry in the city is health care and social assistance. Manufacturing, construction, and utilities account for only 12% of private sector jobs in Trenton (see Table 16).

Table 16: Covered Employment by Sector – Trenton, 2003

| Industry | Number |
|----------------------------------------------|---------------|
| Utilities | 79 |
| Construction | 1,313 |
| Manufacturing | 1,461 |
| Wholesale trade | 1,096 |
| Retail trade | 1,942 |
| Transportation and warehousing | 194 |
| Information | 1,620 |
| Finance and insurance | 561 |
| Real estate and rental and leasing | 781 |
| Professional and technical services | 1,552 |
| Management of companies and enterprises | 344 |
| Administrative and waste services | 1,903 |
| Educational services | 420 |
| Health care and social assistance | 7,556 |
| Arts, entertainment, and recreation | 348 |
| Accommodation and food services | 1,138 |
| Other services, except public administration | 1,348 |
| Unclassified entities | . |
| Private Sector Total | 23,695 |
| Federal Government | 714 |
| Local Government | 6,381 |

Source: NJ Department of Labor.

“Covered employment” refers to jobs covered by unemployment insurance. Data represent annual average 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.

The total data above does not include state government jobs. According to DVRPC data, the total employment in the city in 2000, including state employees, was 58,566.

12. Journey to Work – Employees in the City

The 2000 US Census found that only about 23% of people who work in Trenton live in the city. The inner suburbs account for 26% of city employees, and other Mercer County towns provide 7%. Other leading residential locations are Burlington County, NJ, with 12%, and Bucks County, PA, with 11% (see Table 17).

Table 17: Location of Residence – Trenton Employees, 2000

| County | MCD | Number | Number | Percent | Percent |
|------------|----------|--------|--------|---------|---------|
| Mercer | | 28,317 | | 56.0% | |
| | Trenton | | 11,651 | | 23.1% |
| | Hamilton | | 8,132 | | 16.1% |
| | Ewing | | 3,615 | | 7.2% |
| | Lawrence | | 1,584 | | 3.1% |
| | other | | 3,335 | | 6.6% |
| Burlington | | 5,892 | | 11.7% | |
| Bucks, PA | | 5,561 | | 11.0% | |
| other | | 10,774 | | 21.3% | |

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

D. FUTURE CONDITIONS

1. Population and Employment Projections

DVRPC prepares population and employment projections for its region, which includes Mercer County. These projections indicate that Trenton's population will reverse its trend of decline and increase by 4% between 2000 and 2030 (see Table 18).

Table 18: Population Projections – Trenton, Mercer County, 2000–2030

| | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | % Change 2000-2030 |
|---------------|---------|---------|---------|---------|---------|---------|---------|-----------------------|
| Trenton | 85,403 | 85,477 | 86,644 | 87,625 | 87,885 | 88,506 | 89,126 | 4.4% |
| Mercer County | 350,761 | 362,090 | 373,530 | 379,582 | 385,558 | 391,946 | 398,389 | 13.6% |

Source: DVRPC. Regional Data Bulletin, #73, Population and Employment Forecasts, 2000-2030. March 2005.

Similarly, these DVRPC projections show that the city's employment will increase between 2000 and 2030 (see Table 19).

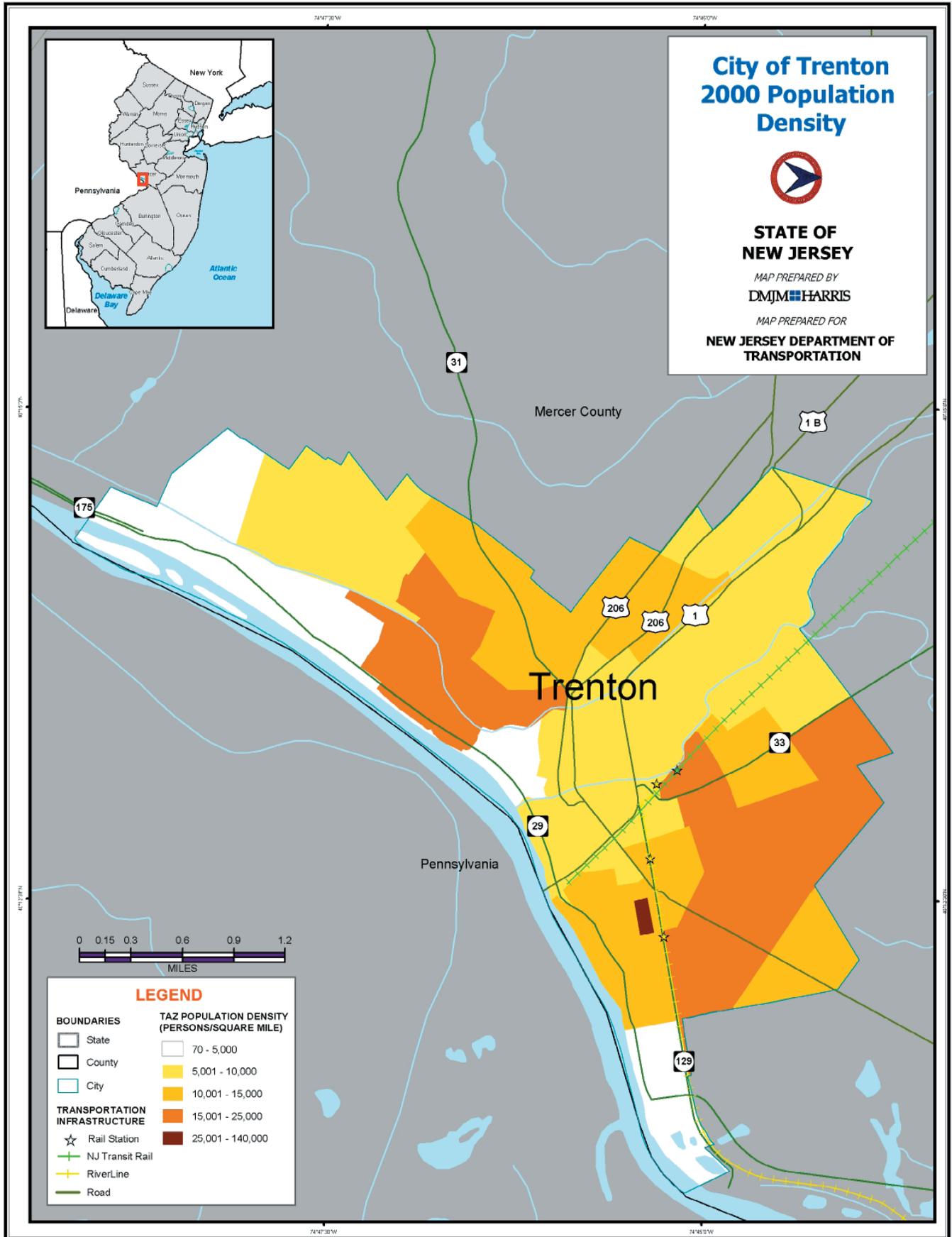
Table 19: Employment Projections – Trenton, Mercer County, 2000–2030

| | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | % Change 2000-2030 |
|---------------|---------|---------|---------|---------|---------|---------|---------|-----------------------|
| Trenton | 58,566 | 59,136 | 60,176 | 60,746 | 61,316 | 61,886 | 62,456 | 6.6% |
| Mercer County | 209,758 | 214,833 | 226,991 | 237,743 | 244,876 | 253,066 | 258,818 | 23.4% |

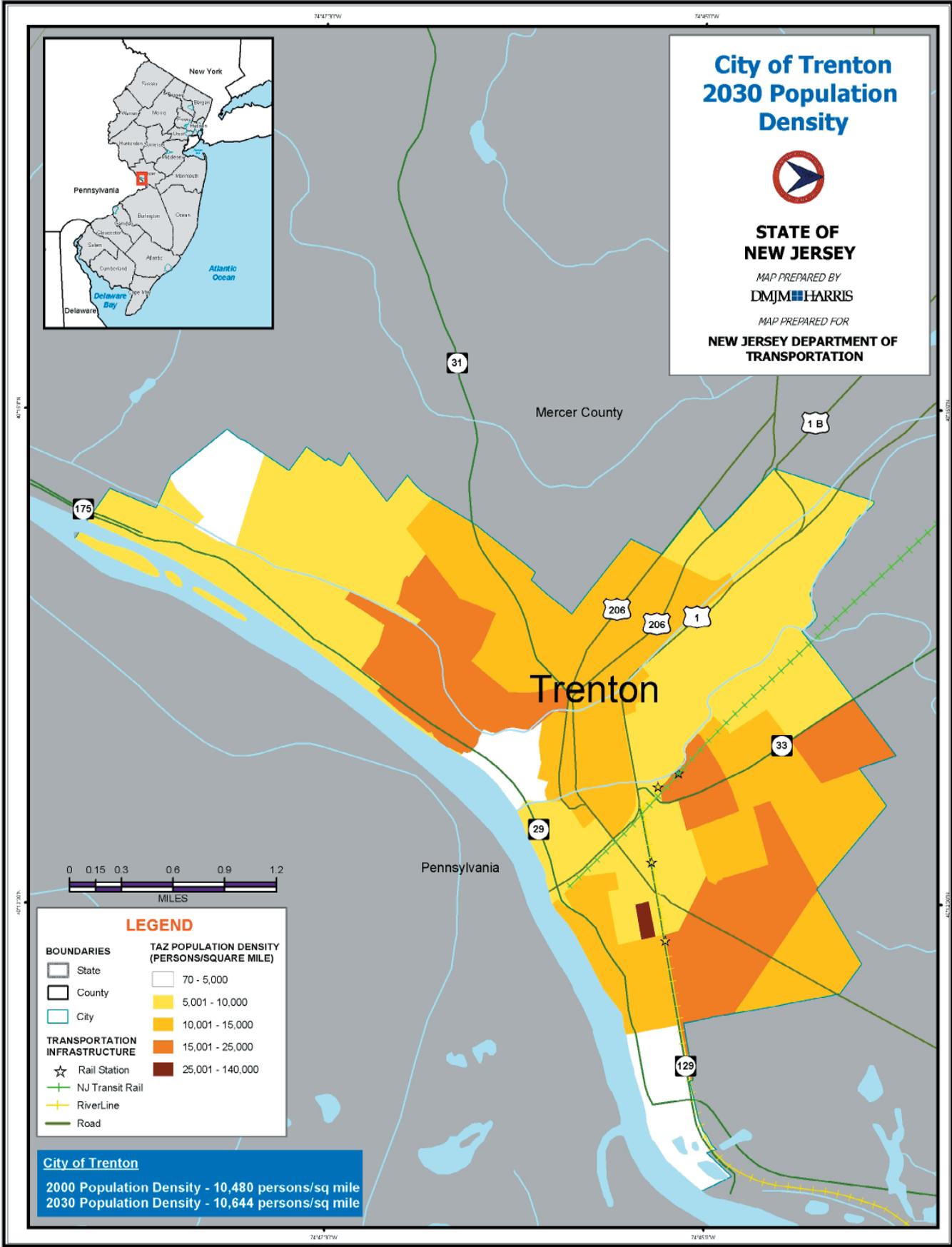
Source: DVRPC. Regional Data Bulletin, #73, Population and Employment Forecasts, 2000-2030. March 2005.

Subsequent projections that DVRPC prepared for the Central New Jersey Route 1 Bus Rapid Transit Alternatives Analysis and the Route 1 Regional Growth Strategy project show a lower rate of population increase and a decrease in employment. Based upon these projections, Maps 4 and 5 show the current (2000) and projected (2030) population density for the city, and Maps 6 and 7 show the current (2000) and projected (2030) employment density for the city.

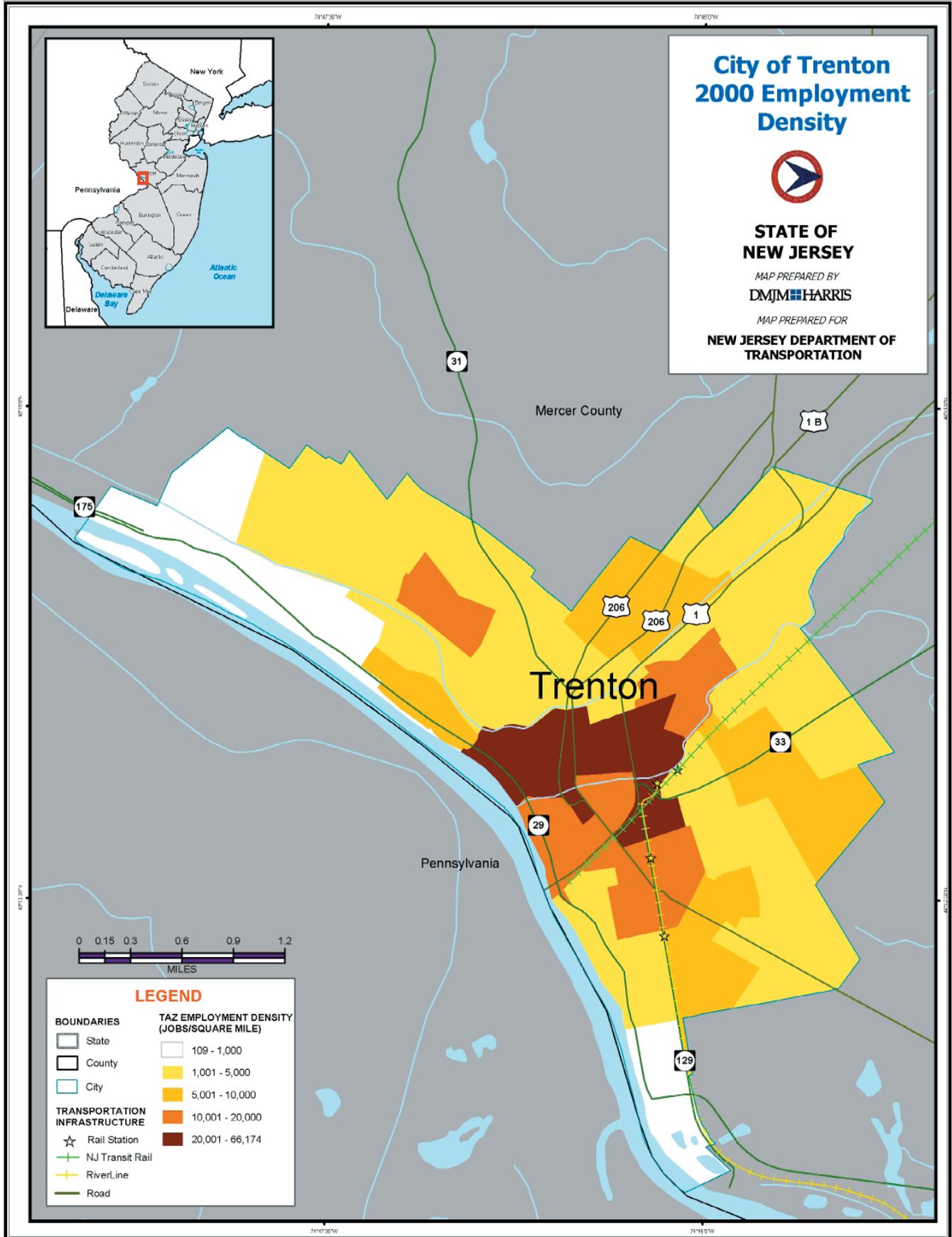
Map 4: 2000 Population Density



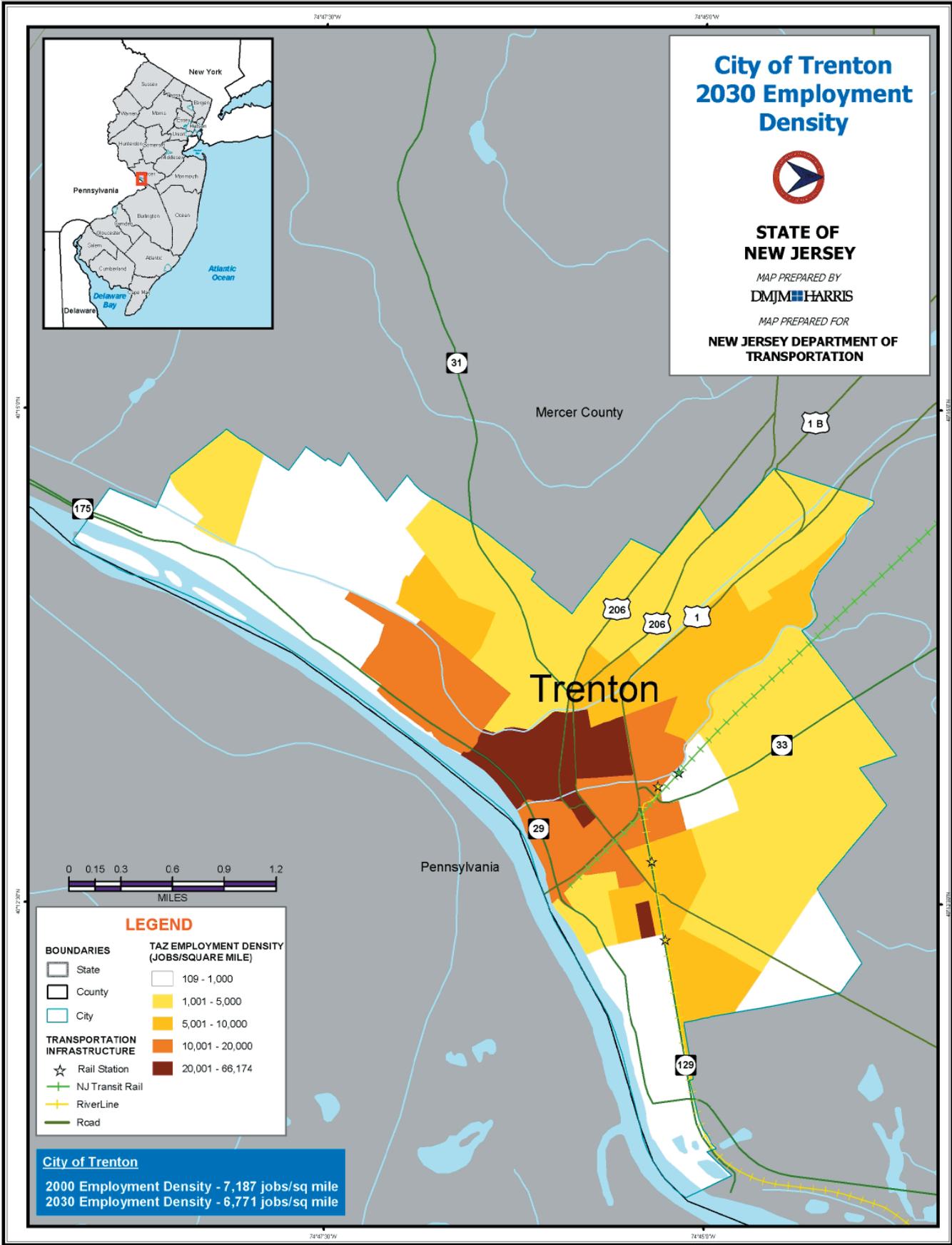
Map 5: 2030 Population Density



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 under existing conditions (2005) and the 2030 Plan. These maps cover the surrounding roadway network that lies within the DVRPC region and portions of Somerset and Middlesex counties. The calculations are based upon evening peak hour traffic volumes, and they are based upon traffic heading both to and from the central point.

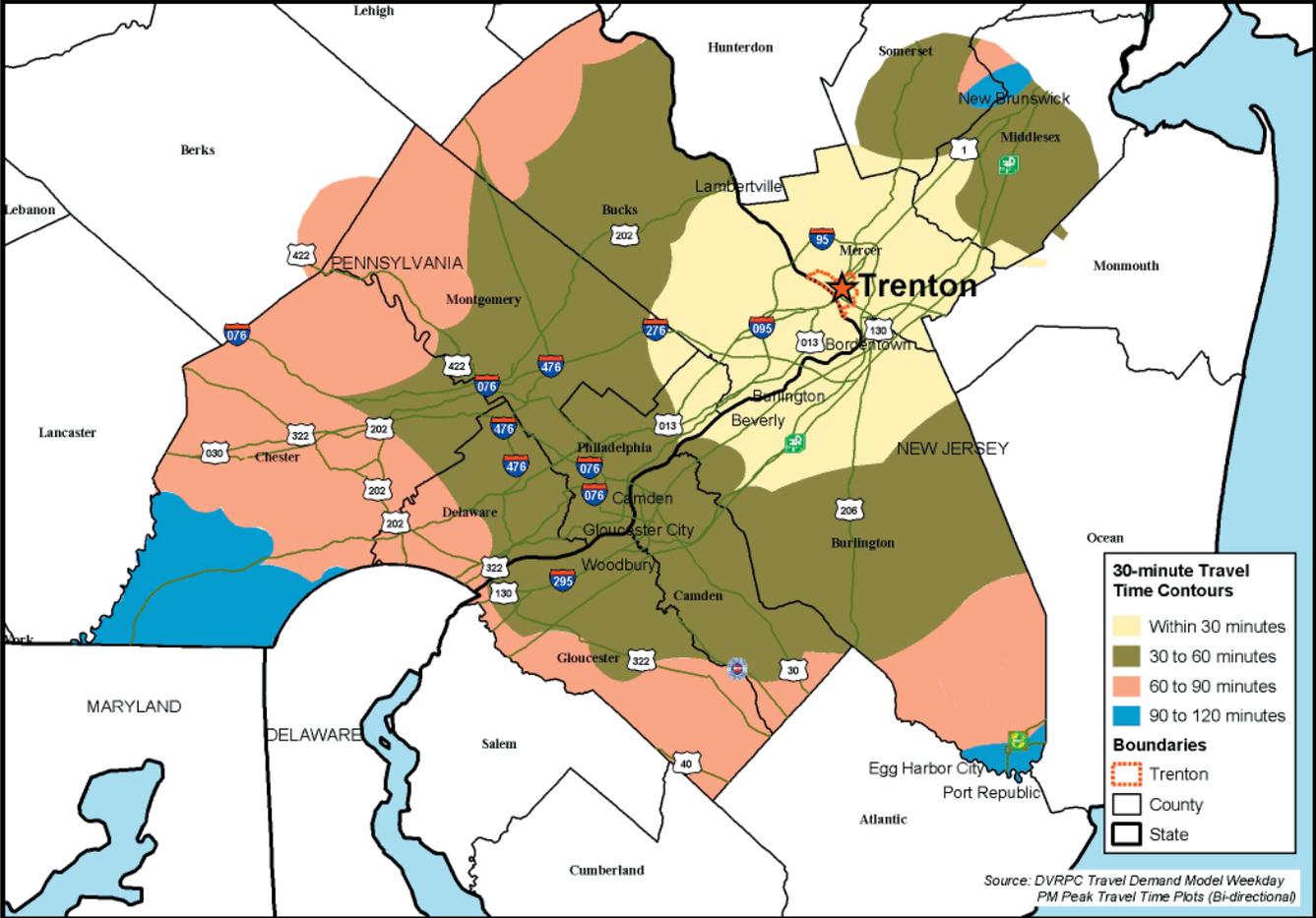
The 2005 existing condition map shows the current travel time limits (see Map 8).

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.

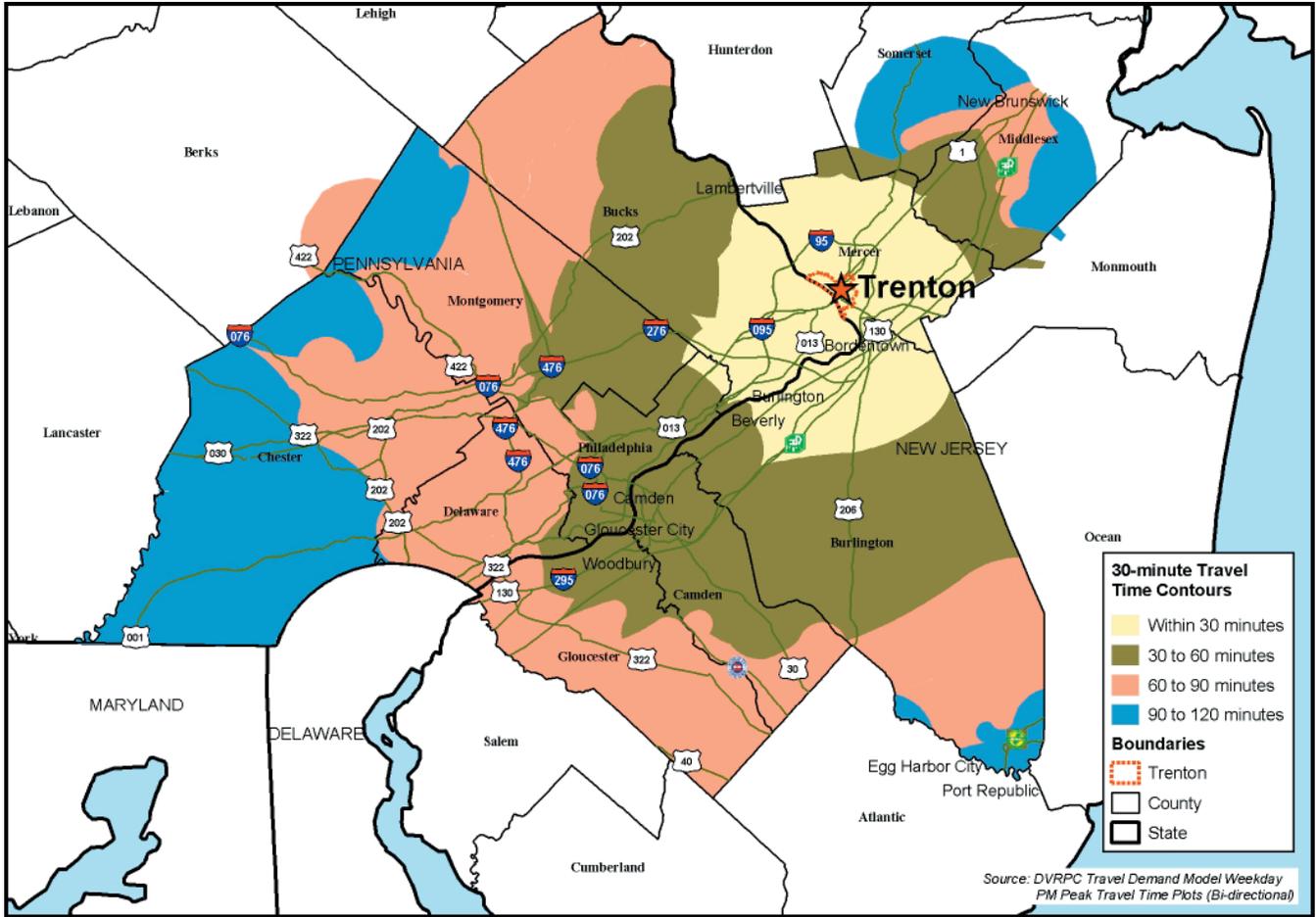
As a contrast, Map 10 shows anticipated travel time limits in 2030 without the level of investments that are contained in the 2030 Plan.

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.

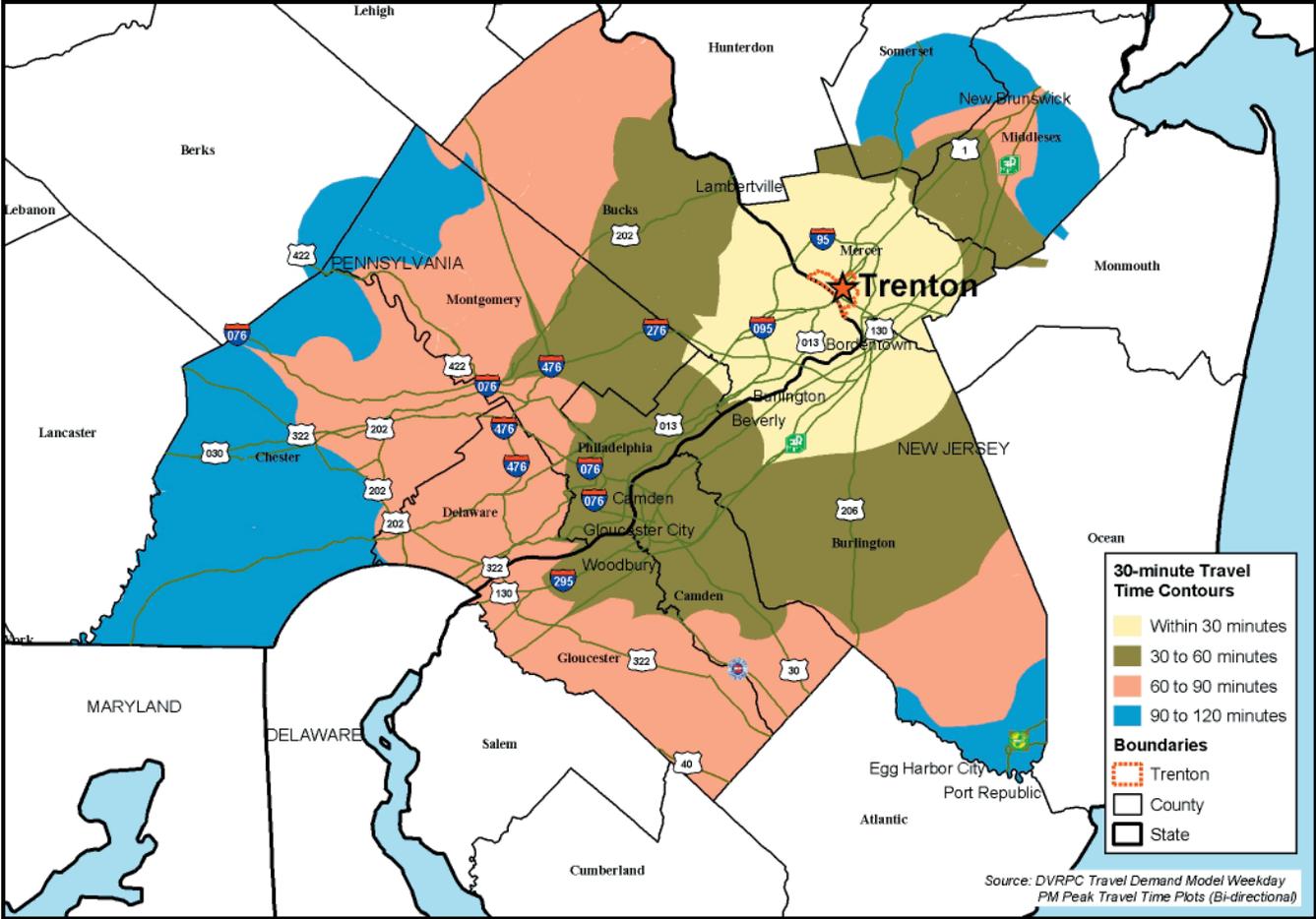
Map 8: Travel Time Contours, Trenton, 2005



Map 9: Travel Time Contours, Trenton – 2030 Plan



Map 10: Travel Time Contours, Trenton – 2030 without Plan



E. CURRENT AND FUTURE DEVELOPMENT

This section provides a summary of current and future development potential in Trenton and the surrounding area, focusing on employment.

1. City

Existing Development

State of New Jersey

The state employs about 21,000 persons in Trenton. Key state job locations in the downtown area include the following:

- ◆ The West State Street area: the State House and State House Annex, State Museum and Library, State Street Square, the Taxation Building (over 1,000 employees), 33 West State Street, the Mary G. Roebling Building (about 1,500 employees)
- ◆ A complex of state office buildings along South Warren Street: the Labor and Industry Building (over 2,000 employees), Health and Agriculture Building, and the Justice Complex (over 2,500 employees)
- ◆ The East State Street/North Clinton Avenue area: the Department of Motor Vehicles, the Department of Environmental Protection main building (about 2,000 employees), and Station Plaza, which has additional DEP offices and other state agencies.

Other Government Agencies

- ◆ The Mercer County Courthouse buildings are located along South Broad Street leading into the downtown area.
- ◆ The Mercer County Administration Building is located farther south along South Broad Street in the area of the Roebling Complex, which also contains the state Housing Mortgage and Finance Agency. Additional county offices are located in the Roebling Metro office complex off Cass Street.
- ◆ City Hall is located along East State Street; the city has 1,700 employees. Located a short distance away is the Federal Courthouse building and annex.

Health Care

Trenton has a few large hospitals which are major employers. Capital Health Systems, which includes the Helene Fuld and Mercer Medical Center hospitals, employs about 3,000 in the city. Also, St. Francis Medical Center, located along Hamilton Avenue, employs about 1,250.

Downtown/Retail

The city's main retail center is located in the downtown area along East State Street and North Broad Street. Downtown also includes the Lafayette Yard Marriott Hotel and Conference Center, which opened in 2002. This 200-room facility, the first downtown hotel in 15 years, includes a conference center, restaurant/lounge, and parking garage.

Industrial/Manufacturing

Trenton has a few concentrations of industrial employment. The New York Avenue corridor just west of US 1 in North Trenton is the largest active industrial area. Another industrial area is the US 1 Commerce Center, which is located on the east side of US 1 north of Perry Street. The Times and Trentonian newspapers are located along the Perry Street corridor. The Trenton Makes Industrial Park is located along Pennington Avenue; the Hibbert Group (350 employees) is a major employer in this area.

Future Development

The city has designated 39 redevelopment areas, and it adopted or amended 12 redevelopment area plans between January 1999 and February 2005. This section provides a summary of current, planned, and proposed development projects in the city.

Downtown

One current project involves rehabilitating the old Broad Street Bank building at the corner of State and Montgomery streets. This project comprises 124 residential units and about 12,000 square feet of retail space.

Along East State Street, a developer recently proposed the Trenton Town Center, a residential, commercial and retail complex, which includes renovating the former Bell Telephone Building. This project proposes 200,000 square feet of office and retail space, along with 250 condominiums. Also, a new Daylight/Twilight Alternative High School is planned for East Hanover Street. The City has considered raising the profile of nearby Mercer County Community College (MCCC) as an educational center, which may include opportunities to coordinate programs and resources between MCCC and the new Daylight/Twilight School.

Along South Broad Street, Mercer County is planning a new Justice Center, including a new 9-story, 240,000-square-foot criminal courthouse adjacent to the civil courthouse and a parking garage.

Nearby, Trenton has been considering new mixed-use development on the site of the existing state employee surface parking lots surrounding the Department of Labor building, Department of Health and Agriculture building, and the Hughes Justice Complex. In fact, the city has approved one project, Trent House Square, but this project has not advanced because of difficulties in negotiating with the state regarding new parking arrangements for state employees. In addition, the city has conducted a demonstration study for a project located on a section of the War Memorial parking lot at the mouth of Assunpink Creek.

A draft Downtown Master Plan proposes several centers for new residential development. In addition to the State Parking Lot Area, these areas include near City Hall area and on West State Street.

Arena District/Roebing Complex

The city recently announced plans for a new mixed-use project across Hamilton Avenue from the Sovereign Arena. The project, previously proposed for the Cass Street area, will include three buildings with restaurants and nightclubs, 90 apartment units, and a parking garage. A new YMCA, previously proposed for this site, instead will be located on the old Apex Lumber site across from the County Administration Building.

Along Clinton Avenue, the city will convert an existing industrial building into a new K-8 Roebing School. The state has designated the school and the surrounding neighborhood as the first School Renaissance Zone (SRZ), which will involve creating a comprehensive neighborhood plan to integrate the school with the community. Available resources will be targeted to spur reinvestment and redevelopment of the neighborhood. In addition, the city has designed three other community-based schools. In all, the city has planned for about 12 major school construction projects, but the status of some projects may be uncertain because of funding issues on the state level.

Waterfront Area

The Advance Group previously had proposed to construct two more office buildings at River View Park, roughly doubling the size of the existing office park. Currently, the city is considering promoting residential development in this area.

Train Station Area

NJ TRANSIT has prepared a train station area Vision Plan, which identifies redevelopment opportunities including a mixed-use building adjacent to the light rail line terminus, an office building on the current “pit” parking lot, and residential infill. The proposed opportunities constitute 375,000 square feet of office space, 70,000 square feet of retail space, and over 500 dwelling units.

The city recently updated its redevelopment plan for the surrounding area. In 2004, Trenton completed a new study of the Miller Homes/Train Station Area, identifying potential uses for the vacant land and surface parking lots in the area. These uses include high-end condos, office, parking with ground-floor retail, and a possible cultural district. Five nearby historic mansions, near the corner of Greenwood and Clinton, are being restored and redeveloped. New uses will include a theater, office, daycare, and retail.

East State Street Corridor

The old NJ TRANSIT bus depot provides a redevelopment opportunity. The city currently plans to use it for a new public works yard. The city is also seeking to provide additional housing, retail, and parks in this neighborhood.

Route 1 Industrial Development

Along New York Avenue on the west side of US 1, the Kramer site (owned by PSE&G) previously had been identified for an “extreme entertainment” arena. If this project does not emerge, the city will promote this area for light industrial use.

Trenton is working to attract more tenants to the Route One Industrial Center on the east side of US 1. In addition, it is seeking to develop a new light industrial/commercial complex along Enterprise Avenue, farther north along the east side of US 1. The city has acquired 11 acres and hopes to attract new or relocated businesses.

The Trenton Makes Industrial Park is planning to redevelop its remaining buildings. This area is part of the county’s Foreign Trade Zone, which provides development incentives.

Neighborhoods/Residential Development

Residential development and redevelopment is occurring in other areas throughout the city. These include Canal Banks, South Trenton, North Ward, East Trenton, West Ward, West End, and Coalport.

2. Suburbs

Section C.10 provided data on the main job locations for city residents, and Table 20 shows the 2000 and projected 2030 employment in these locations. The following is a summary of key suburban job locations, along with future development prospects in these areas:

- ◆ The US 1 corridor north of the city, including Lawrence and West Windsor, is a significant employment area. Two major office parks are Carnegie Center and Forrestal Center, and large retail centers are located at Quaker Bridge Mall, Mercer Mall, Nassau Park, Windsor Green Shopping Center, and MarketFair. The corridor also has many hotels. Quaker Bridge Mall recently announced plans to expand by 650,000 square feet. In addition, the

650-acre Wyeth property, on the northeast quadrant of the US 1 & Quaker Bridge Road interchange, is available for development.

- ◆ The Route 33/US 130 corridor east and north of the city is a growing employment center. Large retail centers in this corridor include the Hamilton Marketplace and East Windsor Town Center. New commercial development is occurring in Washington Town Center, highlighted by the new headquarters of Roma Bank. The Northeast Business Park and Matrix Business Park in Washington Township have several large warehouse and distribution facilities with a combined projected total build-out of over ten million square feet of light industrial and distribution space, and the county recently included this area in its Foreign Trade Zone. Farther north along Route 130 is the Exit 8A area of the New Jersey Turnpike, in Cranbury and South Brunswick, which is a major regional center for warehousing and distribution. This area has over 50 million square feet of industrial space, including regional distribution facilities for Barnes & Noble, The Home Depot, Williams Sonoma, and other companies.
- ◆ The Olden Avenue corridor in Ewing is a designated redevelopment zone, and it includes many retail and commercial establishments. Just to the north of the northern end of Olden Avenue are the NJDOT offices, and The College of New Jersey is located along Route 31 a short distance north of Olden Avenue. Near the Olden Avenue corridor, Wal-Mart has proposed a new store along Spruce Street in Lawrence. The Mercer Crossing study, a collaborative project including Ewing, Lawrence, Trenton, and Mercer County, is reviewing development and redevelopment possibilities for Olden Avenue and the surrounding area.
- ◆ The Business Route 1, Princeton Pike, and US 206 corridors in Lawrence provide several employment clusters. Business Route 1 has mostly retail and commercial establishments, highlighted by the Lawrence Shopping Center. Farther north along Princeton Pike are two major office parks. The Princeton Pike Corporate Park has over one million square feet of existing, approved, and proposed space, and the Princeton Pike Office Park has over 250,000 square feet of space. Rider University is located along US 206 near I-95, and the Educational Testing Service is located north of US 206. Along the Princeton Pike corridor, Capital Health System has announced plans for a new medical care facility just south of I-95.
- ◆ Hamilton has several other key employment locations including Horizon Center, the Robert Wood Johnson University Hospital Hamilton (1,750 employees), and the East State Street corridor (light industrial). In addition, a proposed Transit Village project at the Hamilton Station on the Northeast Corridor commuter rail line would generate over 300,000 square feet of office and retail space and a 200-room hotel (along with 300 residential units). Nearby, a 450,000 square foot office park is under development at the former American Standard site.
- ◆ The lower portion of Bucks County, Pennsylvania, has several major employment sites including Oxford Valley Mall, Sesame Place, and “big box” retail, warehousing, and hotels, mainly along the US 1 corridor. Another potential future regional employment site may be the Philadelphia Park horse racing track in Bensalem. A gambling parlor with over 2,000 slot machines opened here in December 2006, and the facility has plans for hotel, entertainment, and retail uses.
- ◆ One other emerging regional employment location for city residents may be the US 130 corridor south of Trenton in Burlington County. Many light industrial and warehouse jobs currently exist, and the opening of the River LINE has created interest in new development and redevelopment opportunities along this corridor.

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

| Location | 2000 | 2030 | Change | |
|-------------------|----------------|----------------|---------------|--------------|
| | | | Number | Percent |
| Ewing | 28,473 | 34,417 | 5,944 | 20.9% |
| Hamilton | 34,467 | 36,594 | 2,127 | 6.2% |
| Lawrence | 25,419 | 32,595 | 7,176 | 28.2% |
| Princeton Borough | 10,676 | 10,753 | 77 | .7% |
| West Windsor | 21,695 | 33,450 | 11,755 | 54.2% |
| Totals | 120,730 | 147,809 | 27,079 | 22.4% |

Source: DVRPC. Regional Data Bulletin, #73, Population and Employment Forecasts, 2000-2030. March 2005.

F. TRANSPORTATION SYSTEM ISSUES

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

1. Roads

Regional Highway Access

Previous studies have identified the need to improve access between the city and the regional highway network. For example, a full interchange does not exist between US 1 and Route 29; vehicles southbound on US 1 do not have direct access to Route 29, and vehicles southbound on Route 29 do not have direct access to northbound US 1. Because of this lack of connections, the most direct route for commuters traveling between Route 29 to the north and the Trenton Train Station is along Market Street, which traverses a residential neighborhood.

A related issue is that large trucks do not have full access to the freeway system surrounding Trenton, because NJDOT prohibits large trucks from using the Route 29 tunnel. One impact of this restriction is that US 1 northbound trucks that want to connect with I-195/I-295 south of the city use the Market Street exit and go to Stockton Street to connect with Route 129. This movement adds to traffic congestion along Market Street, particularly during the morning peak hour.

Another reported issue is inadequate access between US 1 and the adjacent industrial areas in North Trenton. This situation may limit efficient freight movements to and from the city and generate negative impacts on the surrounding neighborhoods and streets.

Regional roads also can be barriers to circulation within the city. The most notable example is Route 29, which blocks access between downtown and the Delaware River waterfront. The NJDOT Route 29 Scenic Byway Management Plan identifies several related impacts, including a lack of scenic views.

Previous studies also have identified issues regarding inadequate wayfinding and directional signage and a lack of attractive “gateway” entrances along regional highways. For example, while southbound US 1 entering the city provides signage with information on all upcoming exits, similar signage does not exist along northbound US 1.

Traffic Volumes/Congestion

Section I.B.1 provides information on roadway locations that experience high levels of traffic congestion. Previous studies have identified other areas with heavy traffic volumes and delays, including the US 1 toll bridge, the Calhoun Street Bridge, and Route I-195 just south of the city. Just north of the city, US 1 is on NJDOT's "Top 10" congestion list.

Heavy traffic volumes along the Calhoun Street Bridge, particularly during the evening peak hour, create related safety hazards due to queuing along the Route 29 off-ramps to the bridge and queuing along westbound Calhoun Street back into the State Street intersection, sometimes causing "gridlock"-type conditions.

Pavement and Bridge Conditions

Section I.B provides information on state roads with poor pavement conditions and substandard bridges. These data show that the city has a relatively high proportion of structurally deficient and functionally obsolete bridges.

Safety Issues

Section I.B also provides information on high-crash locations and related safety concerns along state roads. The state road section with the highest crash rate is Route 29 near the Calhoun Street bridge. This rate likely is related to the congestion conditions described above. Another high-crash location is along Route 33 (Market Street) near US 1, which may be related to the car-truck conflicts referenced above. Also, NJDOT has designated US 1, from just north of the toll bridge in Trenton to West Windsor, as a priority corridor for safety improvements based on a crash rate of 50% over the state rate and 1000 or more crashes over three years.

Local Road Congestion

Peak hour congestion occurs at a few points on the local street network, including along Olden Avenue and at the intersections of State Street and Calhoun Street (as described above) and Warren Street and Lafayette Street. Congestion at the latter intersection is a problem particularly during the evening peak hour, when significant queuing occurs along southbound Warren Street, extending back into the Warren Street & Front Street intersection.

Local Circulation

The city's new Transportation Master Plan finds that circulation on local streets is hampered by many one-way streets, overlapping street grids, and the non-linear orientation of major streets. Furthermore, the plan identifies several issues regarding local wayfinding. Most streets have older, smaller street signs, and many large gaps exist between signs for major attractions.

The train station area is one area where the roadway geometry and configuration may contribute to motorist confusion and delay. The roadway network in this area has been referred to as a "spaghetti bowl" of ramps. One major issue is that vehicles cannot directly access westbound Market Street (and subsequently southbound US 1 and Route 129) from Barlow Street; all traffic on Barlow Street must follow a ramp onto US 1 north.

Parking

The city has several issues related to parking. They include the following:

- ◆ In general, state workers enjoy an abundance of free parking. This situation distorts parking demand and creates a perception of parking shortages. It also conflicts with redevelopment objectives.

- ◆ The prevalence of surface parking lots disrupts the urban fabric. Surface parking is an inefficient land use, discourages pedestrians, and isolates sections of the city.
- ◆ Many downtown workers monopolize on-street parking spaces, which detracts from the availability of short-term parking for downtown shoppers, tourists, and other visitors.
- ◆ The proposed extension of the River LINE from Trenton Station to the State House along State Street could cause the loss of 500 on-street parking spaces.
- ◆ The current management and pricing of the two large parking structures near the Trenton Station encourages use by commuters, which may not be compatible with redevelopment plans for this area.
- ◆ Parking is a concern in some city neighborhoods, where limited availability detracts from the desirability of residential properties and is a deterrent to business development.

Local Road and Bridge Conditions

Many local streets have poor pavement and substandard bridges. Although the city has received funding for various projects from the NJDOT Local Aid program, it has a backlog in completing these projects. This situation is due to staffing constraints. Also, it is estimated that the city's roadway improvement needs considerably exceed available funding.

Truck Traffic

The impact of truck circulation has become an increasing concern in the city, particularly in areas of North Trenton that are seeing an increase in industrial development. One contributing factor is the relative lack of direct access to and from US 1 (noted above), which leads trucks to use local streets. Also, existing truck routing and signage does not clearly communicate the path between US 1 and the industrial areas. In addition, the current and anticipated development of the Trenton Makes Industrial Center along Pennington Avenue raises truck circulation issues in this area.

2. Public Transit

Station Condition

The current Trenton Station is outmoded and outdated. The station requires architectural and building system improvements, more comfortable surroundings, circulation and short-term parking improvements, and room to handle expanded patronage. NJ TRANSIT designed a current station renovation project to address these issues (see Chapter II).

Multi-Modal Access/Connections

For travelers departing trains and wishing to obtain connecting bus service to the downtown or other local destinations, locating the proper bus has not always been easy. Several different bus stops are located outside the station. The station area provides limited directions and information about bus stop locations, routes, and schedules. NJ TRANSIT's "Capital Connection" initiative has addressed some of these issues, but improvement needs remain. Previous studies have documented issues regarding access to the station and circulation in the station area. The latest study, the Trenton Station Linkage Plan, identifies no fewer than 12 previous studies. The station is somewhat isolated from the downtown area, and the studies have found the need to improve efficient and safe access to and from the station for vehicles, pedestrians, and bicyclists. The next section provides more detail on the issues related to bicycle and pedestrian access.

The new Hamilton Avenue and Cass Street light rail stations also have some issues relating to multi-modal access. Existing NJ TRANSIT bus service serves neither station directly. The closest services to Hamilton Avenue are the 601 and 609 Routes, which run along South Clinton Avenue, and the closest services to Cass Street are the 603 Route, which runs along South Broad Street, and the 607 Route, which runs along Centre Street.

Another possible issue is the ease with which travelers can make connections and transfer between different services. NJ TRANSIT has been working to coordinate schedules between the River LINE and Northeast Corridor rail service.

Frequency of Bus Service/Service Span

While the frequency of service and service span for NJ TRANSIT's local bus route system varies among routes, no regular route has a peak period headway of less than 20 minutes. One exception is the combined frequency of the Capital Connection routes (601, 606, 608, 609) running between the train station and the State House area. The new city Transportation Master Plan identifies low service frequency as the most significant weakness of existing local bus service. The plan states that infrequent bus service makes it difficult for buses to attract the "choice" rider, i.e., one with a choice of modes. It also states that the wide range of service frequencies makes it difficult for the routes to operate as a system. The plan also finds that longer service spans are necessary to serve suburban employment corridors.

Bus Circulation

During the peak period, buses experience delays in some downtown areas due to traffic congestion. These areas include State Street, Broad Street, and Warren Street. Also, the Transportation Master Plan suggests the possible need for an increased frequency of service along State Street.

Bus System Facilities

The new Transportation Master Plan identified a need to improve bus facilities, amenities, and information. It indicates that a lack of route or schedule information may make the system difficult to use. In addition, bus stop locations may be difficult to identify, and many stops lack shelters or benches. The Capital Connection initiative has addressed some of these problems by providing logo signs, maps, and schedule information at some downtown stops.

Scope of Coverage

The local routes are oriented toward downtown connections. Little or no service runs between the train station and other key city attractions, such as Waterfront Park. Previous studies have considered the need for a downtown circulator or jitney service.

Job Access/Reverse Commute

The City of Trenton's Department of Health and Human Services has identified the following issues related to job access and reverse commute:

- ◆ Many employers are not on a bus route, and many residents do not have access to a vehicle or have suspended driver's licenses.
- ◆ A route directly from the city to the US 130 corridor is needed.
- ◆ Extended and flexible bus routes, e.g., along Scotch Road in Ewing, are needed.
- ◆ Shuttle buses should be provided to pick up employees where bus routes fall short.
- ◆ Employees who work late evening or overnight hours need transportation services.

Section C.10 identifies the key suburban job locations in the area. In terms of available transit service to these locations, the following is a brief assessment of possible limitations in service:

- ◆ **US 1 corridor north of city.** NJ TRANSIT's 603 Route provides service at 30-minute headways between the city and Quaker Bridge Mall, Nassau Park, and Mercer Mall. The last evening run to the city from Mercer Mall leaves at 11:15 PM. North of Nassau Park along US 1, NJ TRANSIT's 600 Route provides limited service. The travel time between the Trenton Station and Forrestal Village is over one hour, and the last weekday run from Forrestal Village is at 8 PM.
- ◆ **US 1 corridor south of city.** SEPTA's 127 Route provides limited service between Trenton and Bucks County. The travel time between Trenton and Neshaminy Mall is over one hour, and the last weekday run back to the city is at 6:10 PM.
- ◆ **US 206/Princeton Pike corridors.** NJ TRANSIT's 603 Route no longer serves the Princeton Pike Office Park and the Princeton Corporate Center. NJ TRANSIT's 606 Route provides service at 30-minute headways along US 206 between Trenton and Princeton. This route, however, provides only very limited service (only one weekday run) to the Bristol-Myers Squibb and Educational Testing Service (ETS) sites in Lawrence.
- ◆ **Route 33/US 130 corridors.** The 606 Route also provides service between Trenton and the Hamilton Marketplace. The last evening run to Trenton is at 11:11 PM. This route, runs along Nottingham Way in Hamilton, however, not Route 33, and thus does not provide direct service to the many businesses located along Route 33. The 603 Route also serves Hamilton Marketplace. The last run to Trenton is at 12:25 AM, and the route does provide service to one shopping center along Route 33. The 601 Route also runs between the city and Hamilton Marketplace; the last run to the city is at 9:33 PM. Mercer County's Route 130 Connection does not directly provide service to and from the city, and it does not provide late night service. Its last weekday run to Hamilton from Exit 8A is at 4:12 PM and from East Windsor it is 6:50 PM.
- ◆ **Olden Avenue corridor.** No bus service runs along Olden Avenue in Ewing, although three lines do intersect the corridor.

Aviation

A recent study found that Trenton Mercer Airport has major facility deficiencies, including the following:

- ◆ Non-standard taxiways
- ◆ Functionally obsolete terminal building
- ◆ Inadequate snow equipment storage building
- ◆ Inadequate vehicular parking

Also, no bus route directly serves the airport. NJ TRANSIT's closest local service is the 607 Route, which runs along Bear Tavern Road and provides weekday and limited weekend service between Ewing and Trenton.

3. Bicycle and Pedestrian

Greenway/Trail Connections

Trenton does not have a comprehensive integrated trail network. Providing several connections or "missing links" could strengthen the role of existing trails as key corridors in a citywide network, as well as improving access to the waterfronts and related recreational opportunities.

The Transportation Master Plan refers to the “unrealized recreational and aesthetic potential of Trenton’s waterways.” Specific gaps include the following:

- ◆ No continuous trail along the Delaware River waterfront, particularly a gap between the Calhoun Street Bridge and River View Plaza.
- ◆ Gap in the Delaware & Raritan State Park trail (old canal towpath) between Mulberry Street and Old Rose Street. This gap is especially significant because it is also a break in the East Coast Greenway. In addition, lack of connections in the Calhoun Street area between the D&R path, the existing Stacy Park trail, the proposed riverfront trail, and the Calhoun Street Bridge.
- ◆ No trail connecting the downtown area with the riverfront.

A recent report on the Trenton portion of the Delaware & Raritan State Park identified several other issues, including lack of signage/access/parking, old bridges, and the presence of invasive plant species. A related concern is the surroundings of this path; the towpath itself is in reasonable condition, but much of the surrounding area needs repair and maintenance, e.g., landscaping, trash removal, and fence repair.

Improved Station Access

As noted in Section F.2, various issues relate to bicycle and pedestrian access to and from the Trenton Station. Currently, no marked path or directional signs exist between the station and Market and Stockton streets and downtown. When NJDOT reconstructed the Barlow Circle several years ago, it did not complete a dedicated/designated walkway between Stockton Street and Barlow Street and the station. The “official” path, i.e., following available sidewalks and crosswalks along the south side of Market Street, requires the user to cross ten roadway travel lanes at the intersection of Market and Barlow streets. As a result, the more frequently used path follows mostly unpaved trails on the north side of Market Street. Furthermore, the sidewalks on either side of Market Street under the US 1 and railroad bridges are not well maintained and snow is not shoveled in the winter.

Safe Bicycle Routes

The city has no designated bicycle lanes, except along Front, Warren, and Lafayette streets in the downtown area. Many local streets do not provide good on-street accommodations for bicyclists. Various studies have assessed the level of bicycle compatibility along local streets and identified streets that are not suitable for on-road bicycling. They also have found a need to promote available facilities and routes, as well as a need for bicycle parking facilities, wayfinding, and other amenities.

Enhanced Pedestrian Safety

Many residential and commercial areas of the city have a poor pedestrian environment, with related safety and security issues. The Transportation Master Plan states the need to create safe and comfortable pedestrian environments in the evening for the downtown, arena, and stadium areas. City streets have various streetscaping needs, especially in commercial and retail areas, to increase the attractiveness of these areas as destinations. These areas include downtown, Canal Banks, North Clinton Avenue, Perry Street, Market Street, Stuyvesant Avenue, and the Battle Monument area. The Transportation Master Plan specifically identifies the need for enhancements along Calhoun, Willow, Perry, and Cass streets.

Other pedestrian access and safety problems include lack of good sidewalks, crosswalks, and curb ramps; wide intersection crossings and long signal phases; and barriers such as utility poles and signs. Specific areas of concern include the following:

- ◆ Crossings of Route 29 near Waterfront Park
- ◆ Access between downtown and the waterfront area
- ◆ Crossings of Route 129
- ◆ Paths along Broad Street, Hamilton Avenue, and Clinton Avenue in the Arena District/Roebling Complex area

Also, several residential neighborhoods suffer from the effects of “cut-through” or regional traffic. Of particular interest for pedestrian safety 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 presents an assessment of the progress in implementing these recommendations.

1. Roadways

- ◆ Relieve congestion on major roadways and improve the traffic flow along various roadways and at key intersections.
 - In 2002, NJDOT completed a new 1.4-mile section of Route 29, including a riverfront tunnel, which improved traffic flow in this area.
 - NJDOT made some improvements along US 1 north of the city. In late 2001, NJDOT completed a new interchange at the US 1 and Meadow Road intersection, and NJDOT removed the traffic signal at Nassau Park in 2004. Both projects expedited the flow of traffic along US 1.
- ◆ Improve access to Trenton from major roadways and provide adequate signage.
 - The new section of Route 29 improved access between the city and I-195 and I-295.
 - NJDOT has provided new signage along Route 29 near the Capitol Complex and in the Trenton Complex area.
- ◆ Undertake bridge upgrades and replacements and improve pavement conditions on regional highways.
 - NJDOT recently completed projects to replace the Southard Street Bridge over US 1 and to replace the bridge decks of US 1 over the Olden Avenue exit ramp and Mulberry Street, using its new “HyperBuild” process for the latter project.
 - DRJTBC completed renovating the “Trenton Makes” Bridge in June 2005.
- ◆ Address and implement safety improvements at high-accident locations, including locations along Route 29 near the waterfront area.
 - As noted above, NJDOT has completed reconstructing Route 29 along the waterfront.
 - NJDOT has implemented short-term safety improvements along Route 29 north of the Calhoun Street Bridge.
- ◆ Address downtown parking needs.
 - The city has completed two downtown parking garages – one as part of the Marriott project in 2002, and one as part of the Liberty Commons project in 2004.

2. Public Transit

- ◆ Add late evening and/or early morning bus service to accommodate employees who work the second and third shifts, especially along US 1.
- ◆ Increase service in locations that are underserved, such as north along US 1 to the Princeton area and into Middlesex County, and south along US 1 into Pennsylvania.
- ◆ Consider adding bus service to new locations such as Olden Avenue, the Route 130 corridor in Hightstown/East Windsor and Washington and Hamilton townships, and locations west and north of the city.
 - NJ TRANSIT’s 606 Route provides weeknight service until 12:48 AM from Princeton to Trenton, and the 603 Route provides weeknight service until 11:15 PM from Mercer Mall, Nassau Park, and Quaker Bridge Mall to Trenton.

- Mercer County started a late-night bus service along US 1 in 2002 but discontinued this service in January 2004 due to low ridership.
- The Mercer County WIB initiated the “Route 130 Connection” shuttle service between Hamilton Station and the Exit 8A area.
- NJ TRANSIT extended three bus routes to serve the new Hamilton Marketplace.
- NJ TRANSIT started a shuttle route (a variation of the 604 Route) between the train station and the state Justice Complex.
- The River LINE light rail service between Trenton and Camden started in 2004. This service provides potential access to jobs in Burlington County.
- ◆ Improve transit facilities and intermodal connections.
 - NJ TRANSIT planned and implemented the “Capital Connection.” Under this initiative, NJ TRANSIT designed a logo resembling the statehouse dome and placed this logo next to the route number on the digital display board of buses running between the train station and the downtown area. In addition, NJ TRANSIT prepared new and improved schedules and information for the train station area and the various stops. This effort has assisted people leaving the train station to identify buses that run downtown. NJ TRANSIT also increased peak hour headways of the various buses. All these actions have led to a substantial increase in ridership on the four routes.
 - The city has erected new shelters at several locations in the downtown area.
- ◆ Facilitate bi-state commuting by transit, particularly by improving coordination between NJ TRANSIT and SEPTA regarding schedules, fares, and transfers.
 - NJ TRANSIT has revised its policies to increase “cross-honoring” of monthly rail and bus passes. The River LINE service includes various connecting fare options, including allowing monthly rail and bus pass holders to ride the River LINE for free.
- ◆ Use transit stations to enhance livability in Trenton.
 - As described in Section E.1, NJ TRANSIT has completed a Vision Study of the Trenton Station area. The City has established a redevelopment zone, and in December 2004, the City completed a redevelopment plan for the Miller Homes/Train Station area.
 - NJ TRANSIT has initiated a major rehabilitation and upgrade of the Trenton Station, and it anticipates completing the project in late 2006 (see Chapter II).
 - The city had considered development plans for the area of the Cass Street Station along the River LINE and applied for state Transit Village designation for this area, but these plans have since been changed (see page 32).

3. Bicycle and Pedestrian

- ◆ Improve bicycle and pedestrian facilities.
 - As part of improvements related to the new Marriott Hotel, the city installed bicycle lanes along Warren and Lafayette streets.
 - The city has completed a few streetscaping initiatives, including along South Broad Street near the Arena and along Roebling Avenue in the Chambersburg area.
 - Mercer County completed a new landscaped deck/park above the Route 29 tunnel along the riverfront.
 - NJDEP has made some improvements to the Delaware & Raritan Canal towpath.

II. TRANSPORTATION PROJECTS

This section provides information on currently planned and proposed transportation improvement projects for the Trenton area. Programming/funding sources include the NJDOT / NJ TRANSIT Transportation Capital Program, the NJDOT Local Aid program, the Delaware River Joint Toll Bridge Commission (DRJTBC), Mercer County, and the city.

A. ROADS

1. Regional/State Roads

Road projects on NJDOT's current Transportation Capital Program (see Table 21) include the following:

- ◆ Rehabilitating I-295 between US 1 and I-195 east of the city. Although this project is not in Trenton, it is important because I-295 is part of the regional roadway network that forms an effective beltway around the city.
- ◆ Funding for roadway improvement and streetscaping projects to support economic development in the city.
- ◆ Funding for local street improvements to support redevelopment at the old Magic Marker site.
- ◆ Repaving streets used as detour routes for a proposed project to replace three local street bridges (Chestnut, Monmouth, and East State) over the Northeast Corridor.
- ◆ Studying the possibility of converting Route 29 from a limited-access freeway to an urban boulevard between Route 579 and the downtown area. This project would enable the city to reclaim waterfront access, establish a grid street system in that part of the city, and increase redevelopment opportunities. Related improvements would include new side-street intersections, signals, and crosswalks, and the initial study proposed to eliminate the Route 29 & US 1 ramps, in order to create a nearby development opportunity. NJDOT is conducting the feasibility assessment in two segments: Cass Street to Calhoun Street and Calhoun Street to Sullivan Way. Such a project seems to be consistent with the Delaware River Scenic Byway Management Plan, adopted in 1997 and currently under revision. This plan recommends several strategies for the Trenton section of Route 29 including improving scenic views and landscaping, providing historical information, and providing access to recreational opportunities.

One additional project not on the capital program but on the current Transportation Improvement Program (TIP) would provide reflective striping and raised reflective pavement markers on various roadways in Mercer County. In addition, the NJDOT Study and Development Program includes a project to replace three local street bridges (Chestnut, Monmouth, and East State) over the Northeast Corridor rail line, along with two projects to provide intelligent transportation system (ITS) enhancements to Route 29 through the city and a project to rehabilitate the US 206 – Broad Street Bridge over the Assunpink Creek in the downtown area.

Several other regional roadway projects are in various stages of planning or proposal. For example, NJDOT is studying several proposed improvements to US 1 north of the city, and NJDOT and DVRPC are conducting studies of the Route 33 corridor, running between the city, Hamilton, and Washington to US 130.

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

| | Capital Program | TIP | Study and Development |
|-----------------------------------------|-----------------|-----|-----------------------|
| I-295 Rehabilitation | ● | ● | |
| Route 29 Boulevard Study | ● | ● | |
| Amtrak Bridges Detour Route | ● | ● | |
| Revitalization Improvements | ● | ● | |
| Magic Marker Site | ● | ● | |
| Mercer Co. Reflective Pavement Markings | | ● | |
| Amtrak Bridges | | | ● |
| ITS Enhancements, Phase A | | | ● |
| ITS Enhancements, Phase B | | | ● |
| US 206 Bridge over Assunpink Creek | | | ● |
| I-95 & Scudder Falls Bridge | | | ● |

Source: NJDOT Website, December 2005.

DRJTBC has begun a project to widen and improve the US 1 toll bridge by adding a third northbound lane, which will transition to an exit-only lane at the Route 29 exit. This project will improve traffic flow, particularly for northbound traffic during the morning peak hour. DRJTBC also is considering alternatives for the future of the Calhoun Street Bridge. A new bridge has been under consideration since at least the early 1980s. A more recent study calculated the need for two lanes to accommodate the peak hour directional flows. Most recently, DJTBC initiated a new study of traffic on the bridge and surrounding roads to assess the feasibility of improving traffic flow without constructing a new bridge.

In addition, DRJTBC is preparing an Environmental Assessment to evaluate potential alternatives and select a preferred alternative that will improve safety and relieve congestion on the I-95 Scudder Falls Bridge north of the city. DRJTBC plans to present the recommended preferred alternative at public meetings in spring 2006.

The city's new Transportation Master Plan proposes improved or new interchanges along US 1 near the industrial areas of North Trenton, to facilitate industrial development, efficient goods movement, and worker access. The plan also proposes improving roadway signage to provide better information for both cars and trucks.

DVRPC's new long range plan proposes providing intelligent transportation system (ITS) technology for I-95/I-295 and US 1.

One other regional project with potential significance to Trenton's roadway network is a new interchange between the Pennsylvania Turnpike and I-95 in Bucks County, PA. This project, currently scheduled for completion in 2012, will result in re-designating I-95 to follow the Pennsylvania Turnpike and New Jersey Turnpike to the south and east of Trenton, which is likely to reduce the amount of regional traffic using I-95, I-295, and US 1 in the Trenton area.

2. Local Roads

Between FY 2001 and 2006, the city received allocations of nearly \$8 million through the NJDOT Local Aid Program for 17 local roadway projects. As of August 2005, the city had not yet awarded contracts for 12 of these projects. Upcoming projects will include Broad Street between Market and Perry streets, Stockton Street, and the Perry Street and North Clinton Avenue intersection. The last project will facilitate easier truck movements between US 1 and the Route One Industrial Center.

The proposed redevelopment of the State Parking Lot Area will require substantial local circulation improvements, including extending the local grid street system and connecting with the regional roadway network. The city has initiated discussions with DRJTBC regarding possibly transferring jurisdiction of New Warren Street from DRJTBC to the city, to complement the city's plans and the proposed Route 29 boulevard concept. Subsequently, DRJTBC awarded the city a grant to realign South Warren Street, upgrade and install new traffic signals, and provide pedestrian and landscaping improvements. Meanwhile, the county anticipates that its nearby planned new courthouse and parking deck will require redesigning and reconstructing surrounding local streets, including the intersection of Market Street and Warren Street.

The new Trenton Station Linkage Plan includes proposals for revising and improving circulation on the local streets surrounding the station. One proposal is to realign the intersection of Market Street and Barlow Street near the US 1 ramps, perhaps making Barlow Street the "through" street leading to and from the station.

The County has a few planned or proposed projects for its roads within the city. One project is to improve the intersection of Hamilton Avenue and Clinton Avenue, and another project is to improve the intersection of Calhoun Street and Martin Luther King, Jr. Boulevard.

Downtown Circulation/Wayfinding

Various studies have called for improvements to wayfinding. In particular, the State House District Access and Circulation Review and the Master Plan for the Trenton Capital District have made recommendations in this area. The new Linkage Plan identifies within the station area over 30 "points of information" for which improved signage is necessary.

Parking

Various recent initiatives relate to improving parking conditions, including the following:

- ◆ The Mayor has proposed to construct several parking structures, particularly in the areas currently occupied by surface parking, including the state parking lots along Warren Street. The city is considering the need for a structure to support its initial development plans in the area of the Justice Complex.
- ◆ The County Executive convened a parking summit in December 2004. At this meeting, he discussed the county's plans to build a new courthouse with a new parking structure.
- ◆ The Mercer County Improvement Authority (MCIA) has planned for four new structures in the Roebling Market area. In addition, MCIA is studying citywide parking needs.
- ◆ The developer of the Broad Street Bank building will build a nearby parking deck to support the new project.

In general, the new Transportation Master Plan emphasizes the need to balance new development and parking. It finds that proposed residential and commercial projects will require good planning for circulation and parking, particularly structured parking in Downtown, the Arena District, and the State Parking Lot Area.

3. Goods Movement

The new Transportation Master Plan proposes a few projects to assist in efficient freight movement and to protect residents from truck traffic impacts. One project is to upgrade US 1 interchanges near industrial areas. Another would extend Muirhead Avenue from the Route 1 Industrial Park area to Olden Avenue. This connection would improve access for inbound trucks on US 1 between the New York Avenue interchange and the Route One Industrial Center, enabling them to avoid the intersection of North Olden and North Clinton Avenues. The plan also recommends that the city plan and implement an updated truck route program.\

B. PUBLIC TRANSIT

1. Northeast Corridor

NJ TRANSIT has designated the Trenton – New Brunswick corridor as a “Priority Transit Corridor.” NJ TRANSIT’s Access to the Region’s Core (ARC) project has been studying the feasibility of new rail tunnels under the Hudson River. This project would increase the capacity of service along the Northeast Corridor (NEC). NJ TRANSIT also is preparing design work for further expanding the Morrisville Yard. This Phase II project would double storage capacity to accommodate additional service along the NEC.

In addition, NJ TRANSIT is planning to introduce new multi-level train cars to several commuter rail lines, including the NEC, in late 2006.

Also, NJ TRANSIT has considered the possibility of implementing “one-seat” local service between New York and Philadelphia. Such service would not directly benefit Trenton, but it would improve overall system efficiency and reduce passenger circulation issues within the Trenton Station.

NJ TRANSIT has started a major renovation of the Trenton Train Station. This project includes expanding the building footprint and adding a mezzanine level to provide additional office and retail space; exterior and interior architectural improvements; upgrades of heating, air conditioning, elevators, escalators and lighting; landscaping and circulation improvements to the existing parking areas; and miscellaneous improvements including closed circuit television and passenger information displays. NJ TRANSIT anticipates completing the project in late 2006.

The city’s new Trenton Station Linkage Plan proposes numerous improvements to station area access and circulation for vehicles, pedestrians, and bicyclists. These improvements include signage, sidewalks and crosswalks, bicycle lanes, and signal timing changes.

Another project along the Northeast Corridor that may benefit Trenton is a new parking structure at the Hamilton Station. This project could further help to relieve parking demand and local traffic congestion at the Trenton Station.

2. Other Rail Projects

NJ TRANSIT has studied the feasibility of extending the River LINE from the Trenton Station along State Street through the downtown area to the State House. DVRPC’s new long-range plan includes this project. NJ TRANSIT also has considered eventually further extending this line from the State House to the Trenton Mercer Airport.

Just north of the city, NJ TRANSIT has been studying the feasibility of re-activating commuter rail service on the West Trenton Line between the West Trenton Station in Ewing and the Raritan Valley Line in Somerset County. This service could reduce some current travel demand on US 1 and the Northeast Corridor.

Also, the Southeastern Pennsylvania Transportation Authority (SEPTA) previously has studied a possible “Cross-County” rail service running from Trenton west across suburban Bucks, Montgomery, and Chester counties in Pennsylvania, but this project currently is not a high-priority project for SEPTA.

3. Bus Service

The city's new Transportation Master Plan includes several recommendations for improving local bus service. One recommendation is to establish "transit priority streets," possibly including State Street, Broad Street, Warren Street, and Clinton Avenue. These streets would include features such as dedicated bus lanes or pre-emptive signal timing to enable buses to avoid vehicular congestion. These improvements could provide substantial time savings for bus riders.

The city is considering the possibility of a downtown circulator, or jitney, service connecting the train station and light rail stops with key downtown destinations.

Mercer County is planning to revise the routing of its 130 Shuttle service. The county also recently received a grant from NJ TRANSIT's Community Shuttle Program for shuttle service to connect Olden Avenue with local bus service, light rail, and commuter rail. The DRJTBC Southerly Crossings Study proposed regional express bus service between park-and-ride areas at the Quaker Bridge and Oxford Valley malls, with several park-and-ride lots between these two locations.

NJ TRANSIT has completed an alternatives analysis for a potential bus rapid transit system (BRT) for the central US 1 corridor between I-95/I-295 and South Brunswick. The planning for this system includes a proposed network of bus feeder services, linking to Trenton's local bus system.

The city's Transportation Master Plan has identified other potential bus system improvements including increased information on routes and schedules, more amenities including shelters and benches at bus stops, and improved connections and transfers between different services and providers.

DVRPC is planning a study to develop a strategic plan to coordinate paratransit shuttle service in Mercer County.

4. Aviation

Mercer County has proposed a major project to expand and improve the facilities at Trenton Mercer Airport. This project includes the following elements:

- ◆ Relocated, widened, and extended taxiways
- ◆ Expanded apron area
- ◆ New terminal building, accommodating two aircraft gates
- ◆ New snow removal equipment storage building
- ◆ Re-aligned access road
- ◆ Added parking

C. BICYCLE AND PEDESTRIAN

1. Trails/Greenways

NJDOT's current Transportation Capital Program includes a project for the Delaware River Heritage Trail, which would be a 50-mile loop on both sides of the river connecting Trenton with Palmyra, NJ, to the south and Morrisville, PA (via the Calhoun Street bridge) to the west. The NJDOT Study and Development Program includes projects for two necessary riverfront trail segments in Trenton: from Stacy Park (just north of Calhoun Street) to Assunpink Creek, and from Assunpink Creek to the Old Wharf.

The East Coast Greenway (ECG) project seeks to provide a continuous off-road trail between Maine and Florida. From the north, the proposed path follows the towpath of the Delaware & Raritan Canal into Trenton until the canal and towpath end near Mulberry Street. The Master Plan for the Delaware & Raritan State Park calls for addressing this "missing link" in Trenton between Mulberry Street and Old Rose Street. It also states the need to provide a bicycle and pedestrian connection between the towpath trail and the Calhoun Street Bridge. Good route design in this area is necessary to link the towpath, the Stacy Park trail, the proposed new riverfront trail, and the Calhoun Street bridge.

The park plan identifies 30 projects designed to improve access to and from the park, provide links to nearby historic and natural resources, and develop the area as an urban park in Trenton. A supplemental plan report proposes several improvements to the Trenton portion of the towpath trail, including improved maintenance and landscaping, signage and access, new bridges, and a paved trail. The redevelopment plans for the Canal Banks area include greenways and open space.

In addition, DEP recently announced the winner of a design competition for its proposed new Capital Park System, which will link the State House and riverfront areas with other historical and cultural areas in the city. The preferred design will emphasize connectivity among the different resources and the local circulation network. Key objectives are providing access to the park, linking historic resources, providing signage and wayfinding, and linking to regional trails.

Trenton has been working on plans for the Assunpink Greenway, which involves combining three existing parks with several remediated brownfield sites to create a new linear park and greenway. The city has acquired some parcels for this project. A related proposal is for a trail to extend along the creek from Mill Hill Park in the downtown area to the river, including uncovering or "daylighting" the creek between Broad and Warren streets.

The new Transportation Master Plan proposes converting the abandoned 3.5-mile Delaware & Bound Brook right-of-way into a trail. It also proposes a Princeton rail trail extension via an on-road bicycle boulevard.

NJDOT has funded several projects to implement a "Capital to Coast" trail between Trenton and Manasquan, and the trail is now complete between Allaire State Park and Manasquan.

2. On-Road Bicycle Facilities

Related to its bicycle level of service analysis for specific local roadway segments, the new Transportation Master Plan proposes several improvements to accommodate on-road bicycling. These improvements include widening cartways and shoulders, installing bicycle lanes, posting "Share the Road" warning signs, and providing nearby bicycle parking.

3. Pedestrian Enhancements

As previously noted, the new Trenton Station Linkage Plan provides detailed concepts for improving pedestrian and bicycle access and safety in the station area. Among the key general proposals are Improving or adding sidewalks, installing crosswalks, implementing traffic calming, adding signing and lighting, and providing maintenance and snow removal. NJDOT plans to widen the sidewalk and install a bicycle lane along westbound Market Street between Stockton Street and Barlow Street.

In addition, studies have considered potential improvements in bicycle and pedestrian access to and from the Hamilton Avenue and Cass Street stations of the River LINE, and NJDOT has conducted a special study of pedestrian safety issues at the intersection of Hamilton Avenue and Clinton Avenue.

Planned or proposed streetscape improvements include the following:

- ◆ The city is planning some streetscaping projects including along South Broad Street north of the Arena and along South Clinton Avenue.
- ◆ NJ TRANSIT has provided the county funding for streetscaping improvements along Cass Street between the riverfront and the River LINE Station along Route 129, and the county is considering a streetscaping project along South Broad Street from Liberty Avenue to the city limit.
- ◆ The new Transportation Master Plan proposes streetscaping improvements in areas including Calhoun Street, Willow Street, Perry Street, and Cass Street.

The city has received some funding from the NJDOT Local Aid Program for pedestrian safety improvements. One project is in the area of the Cadwalader School. These improvements on Edgeware Avenue and West End Avenue include reversing one-way traffic, installing a separate travel lane for school buses, a warning light, and signage.

Other potential pedestrian access and safety enhancements include widening sidewalks, upgrading intersection crossings, revising signal timing, and installing traffic calming measures.

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 Trenton and the regional road network

- ◆ The city, based upon the Trenton Station Linkage Plan, should identify its preferred alternatives for improving access and circulation between the regional roadways and the train station, and the city should work with NJDOT to advance the improvements.
- ◆ NJDOT should complete the current Route 29 boulevard study. The study should lead to identifying and planning for re-design that maintains traffic flow along Route 29, improves local circulation through a grid street system, and facilitates and complements redevelopment opportunities.
- ◆ NJDOT should revisit the Route 29 tunnel truck ban and consider feasible alternatives for removing the ban. In the meantime, NJDOT should coordinate with the city in addressing the impacts of trucks using alternative routes.
- ◆ NJDOT should continue to review directional signage needs along regional roads and provide appropriate signs. NJDOT and the city should work together to consider gateway treatments at key entrances to the city along major highways.
- ◆ The city should assess the access needs of the industrial area along US 1 in north Trenton and determine the possible need for new ramps along both sides of US 1 to provide access to key business locations. Based upon the city's assessment, NJDOT should study the feasibility of new ramps.

Pursue strategies and projects to reduce congestion along key regional roads

- ◆ The Delaware River Joint Toll Bridge Commission (DRJTBC) should advance its plans to widen the US 1 toll bridge. DRJTBC, in conjunction with NJDOT and the city, also should consider options for improving the flow of US 1 southbound at the toll bridge during the evening peak hour.
- ◆ DRJTBC should continue to study alternatives for reducing peak hour congestion at the Calhoun Street Bridge and advance the preferred option. In the meantime, DRJTBC, NJDOT, the county, and city should work together to provide short-term measures to reduce queuing along Route 29 and Calhoun Street at the Route 29 and Calhoun Street interchange. All agencies should seek to coordinate long-term plans for the bridge with the concepts for a Route 29 boulevard, proposed widening of West Trenton Avenue in Morrisville, and the traffic impacts of redevelopment proposals for the Glen Cairn Arms apartment building.
- ◆ NJDOT should review peak hour congestion along Routes 29 and 129 and I-195 and identify possible operational improvements to expedite traffic flow. The alternatives should balance the need to reduce congestion levels with local circulation needs, particularly for pedestrians crossing Routes 29 and 129.
- ◆ NJDOT should advance its various planning studies for US 1 capacity improvements to the north of the city.
- ◆ NJDOT should consider the possible benefits of using intelligent transportation system (ITS) technology to improve traffic flow along state roads.

Address sub-standard pavement and bridge conditions

- ◆ NJDOT should expedite its planned project to replace three local street bridges over the Northeast Corridor rail line.
- ◆ NJDOT should identify and prioritize additional bridge repair and pavement improvement needs along state roads in the city.

Provide safety improvements at high-accident locations

- ◆ NJDOT should maintain efforts to identify high-crash locations and to formulate alternatives for improving safety at these locations.

Improve downtown circulation

- ◆ The city should plan and implement revised signal timing and coordination for downtown streets to facilitate efficient circulation, particularly during the morning and evening peak hours.
- ◆ The city, in coordination with NJDOT, should draw upon previous studies to plan and implement an enhanced and integrated wayfinding system for the local street network.

Improve truck routing and circulation

- ◆ The city should advance plans to extend Muirhead Avenue to provide direct access between the Route One Industrial Park and Olden Avenue.
- ◆ The city should study truck movement needs related to the Trenton Makes Industrial Park and develop preferred truck routes.
- ◆ The city should prepare a comprehensive truck circulation plan, including designated truck routes, and install appropriate signage and directions.

Address parking needs

- ◆ The city and the State of New Jersey should coordinate to conduct a comprehensive downtown parking and circulation study, especially including the current and projected needs of state office workers.
- ◆ The city should plan and implement a comprehensive parking management strategy including new structures, strict enforcement of on-street parking regulations, etc. This strategy is necessary to promote the use of downtown parking structures for long-term daily parking and to discourage the widespread use of on-street parking spaces by downtown workers.
- ◆ The city and county should continue to study and plan for parking needs in the Roebling Market/Arena District. The city also should conduct neighborhood parking studies to address residential and non-residential parking needs.
- ◆ The city should consider innovative parking management strategies, including parking charges/cash-out, shared parking, and maximum parking requirements.

Expedite local street improvements

- ◆ In conjunction with the Route 29 boulevard plan and the planned County Justice Complex, the city should initiate a study to prepare an overall plan for redevelopment, circulation, and parking in the State Parking Lots and South Broad Street area, including Market and Warren streets. This plan should incorporate at least the following elements: redevelopment plans, Route 29 boulevard study, DRJTBC funding for re-aligning Warren Street and other streets, and parking needs.
- ◆ The county and city should coordinate planning for improvements to the local roadway network.

- ◆ The city should advance design and bid documents for projects that have received NJDOT Local Aid funding awards, and it should consider the need for increasing staff capacity in this regard.
- ◆ The city should use its pavement management system to program necessary repairs along city streets, and it should consider implementing an accelerated pavement management and rehabilitation system.

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 continue with overall rail system planning efforts that will increase the frequency of service along the Northeast Corridor to and from Trenton. Increased service will depend largely upon increasing peak hour trans-Hudson commuter rail capacity. Such planning should include connecting bus or shuttle service between stations and nearby work sites.
- ◆ NJ TRANSIT should continue to evaluate the feasibility of “one-seat” local service along the Northeast Corridor between New York and Philadelphia.
- ◆ NJ TRANSIT should continue to provide frequent River LINE service to ensure reasonable connections between the River LINE and the Northeast Corridor rail line.
- ◆ NJ TRANSIT and the city should maintain and strengthen efforts to enhance residential and business opportunities in the area surrounding the Trenton station. NJ TRANSIT’s Transit Friendly Communities for New Jersey study of the station area and city redevelopment plans provide a guide to potential development opportunities. These efforts should ensure that the station is integrated functionally and visually with the surrounding area and serve as a catalyst for economic development.
- ◆ The city should work with NJDOT and NJ TRANSIT to implement measures to ensure efficient and safe circulation among rail, bus, and pedestrian and bicycle users in the area around the Trenton station. The recent Trenton Station Linkage Plan recommends many such measures including further improving connections between rail service and local bus service; completing planned pedestrian paths between the station and downtown Trenton; making roadway and intersection improvements, and providing linkages between the station and proposed redevelopment areas.
- ◆ NJ TRANSIT should give priority consideration to obtaining funding for the proposed extension of the River LINE to the State House area. NJ TRANSIT also should study the feasibility of further extending this service to the West Trenton area, as proposed in its 2020 Transit: Possibilities for the Future document.
- ◆ The city and county, in collaboration with NJ TRANSIT, should pursue potential transit-oriented development opportunities around the Hamilton Avenue and Cass Street River LINE stations. These efforts should include providing multi-modal connections, including local bus, bicycle, and pedestrian facilities. As new development occurs along the River LINE, NJ TRANSIT and local agencies should work to provide and enhance connecting bus or shuttle service between stations and nearby work sites, such as the service that Burlington County’s Burlink shuttle provides.
- ◆ NJ TRANSIT should complete the final environmental assessment for the proposed West Trenton commuter rail line service.

Maintain and expand local bus service

NJ TRANSIT, the county, and the city should collaborate to conduct a comprehensive bus service needs assessment. This study should evaluate the feasibility of expanded or new services and determine whether to allocate limited public funding to increase 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 and/or weekend service, increased service in locations that are underserved, and service to new

locations. Potential areas for expanded service (based upon local studies and review of current bus routes / schedules and employment locations) include the US 1 corridor , the Scotch Road / Trenton Mercer Airport area in Ewing, the Route 33 corridor in Hamilton and Washington, and the US 206 / Princeton Pike corridor in Lawrence.

- ◆ Also based upon reviewing current routes / schedules and employment locations, NJ TRANSIT should consider modifying the 606 route schedule to increase the frequency of service to Educational Testing Service in Lawrence, modifying the 606 route to directly serve the new businesses in the Washington Town Center, and providing bus service along Route 33 in Hamilton to directly serve the many commercial and retail establishments along this corridor.
- ◆ NJ TRANSIT and the city should consider the possibility of designating “transit priority streets” in the city (including State Street, Broad Street, and Warren Street), as the city’s new transportation master plan proposes.
- ◆ As part of further considering a proposed Bus Rapid Transit (BRT) system in the area, NJ TRANSIT should include potential feeder service connections with Trenton, and it should ensure that any modifications to the existing local bus routes do not decrease access for city residents to suburban job locations. This planning also should consider the feasibility of regional express bus service, as DRJTBC’s Southerly Crossings Corridor study proposed.
- ◆ NJ TRANSIT and SEPTA should evaluate the potential for expanding bus service between Trenton and Bucks County, PA, as the 2001 Urban Supplement proposed. This evaluation should consider the need to coordinate operations, including scheduling, fares, and transfers.
- ◆ Building upon the success of the Capital Connection program, NJ TRANSIT should continue efforts to upgrade bus system facilities and amenities, including bus stops, shelters, sidewalks, bicycle racks, schedules, and fare information, as the city’s transportation master plan proposes.
- ◆ NJ TRANSIT, in conjunction with other transit service providers, should continue to work to improve connections and transfers between different services and systems to encourage transit ridership, as the city’s transportation master plan recommends. NJ TRANSIT and other public agencies should promote the NJ TRANSIT policy that allows holders of monthly rail passes to ride free on local buses.
- ◆ The city should complete evaluating the benefits and cost-effectiveness of a downtown circulator/jitney service (as proposed by previous studies including the city’s transportation master plan) and determine whether to plan and implement such a service.
- ◆ The county should continue to review and refine its US 130 shuttle service, as appropriate, to provide greatest effectiveness, particularly for city residents traveling to jobs in this corridor.
- ◆ The county should conduct comprehensive planning for the new shuttle service that NJ TRANSIT has approved for along Olden Avenue. The county and NJ TRANSIT should monitor this service closely to determine how to provide the most effective service.
- ◆ Local agencies should explore opportunities for increasing paratransit services, including shuttles, vanpools, and jitneys, and they should seek to obtain greater employer participation in and sponsorship of such services. These efforts should build upon existing activities of the Greater Mercer Transportation Management Association in this regard, including ridematching and ridesharing activities. Public agencies and private employers should promote TransitChek and improve overall transit marketing efforts.

C. BICYCLE AND PEDESTRIAN

Plan and implement trails and bicycle routes

- ◆ State, county, and city agencies should continue to work together to plan and implement a comprehensive, integrated network of paths and trails, including continuous and connected waterfront trails. This planning should give priority to filling in key gaps including those between the following points:
 - “Missing link” of Delaware & Raritan Canal State Park between Old Rose Street and Mulberry Street.
 - Delaware & Raritan Canal towpath trail, riverfront trail, and Calhoun Street Bridge (links for East Coast Greenway)
 - Calhoun Street Bridge and River View Plaza
 - Downtown and the Delaware River waterfront
- ◆ The state should continue efforts to improve the appearance of the D&R towpath, as well as improving access to the trail and providing appropriate signage. The state should review the recommendations of the D&R Canal Park Plan and the recent conference and develop plans to implement them. The state and city should coordinate this work with plans for trails and open space in the Canal Banks area.
- ◆ The city should continue planning and implementation work for the Assunpink Greenway.
- ◆ State and local agencies should coordinate to plan and implement the city’s section of the Capital-to-Coast trail.
- ◆ The city should assess the feasibility of a trail along the path of the old Delaware and Bound Brook (Reading) Railroad.
- ◆ State and local agencies should work together to improve on-road bicycle facilities and develop a connected network of on-road and off-road facilities. This effort 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.
- ◆ The city should continue to apply for funding from available programs, including the NJDOT Local Aid for Centers program, for projects to improve bicycle routes, along with pedestrian safety and streetscaping improvements.

Enhance pedestrian access and safety

- ◆ NJDOT should complete its special study of the Hamilton Avenue & Clinton Avenue intersection and program any necessary improvements. It also should apply the findings of this analysis to similar locations.
- ◆ The city should work with NJ TRANSIT to ensure good pedestrian and bicycle connections with public transit services, particularly at the Trenton Station and the Hamilton Avenue and Cass Street stations of the River LINE. NJ TRANSIT should maintain and promote “bikes on buses” capabilities. The city should complete work on the Trenton Station Linkage Plan and advance preferred alternatives.
- ◆ The city should emphasize pedestrian enhancements to downtown streets, including sidewalks, curb ramps, and crosswalks and seek to implement pedestrian improvements along Calhoun, Willow, and Perry streets.

- ◆ The city should expand traffic calming measures to residential neighborhoods and incorporate these measures as part of developing “safe routes to schools” plans.
- ◆ The city should implement planned or proposed streetscaping projects along Cass Street, Broad Street, North Clinton Avenue, and other locations. The city should incorporate streetscaping improvements into redevelopment efforts along other corridors, e.g., East State Street and South Clinton Avenue.
- ◆ The city should require pedestrian and bicycle accommodations as part of all new development and redevelopment projects.

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