

# South Jersey Transportation Planning Organization 2035 Regional Transportation Plan Update

## D. Transportation System Assessment



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# Transportation System Assessment

## Introduction

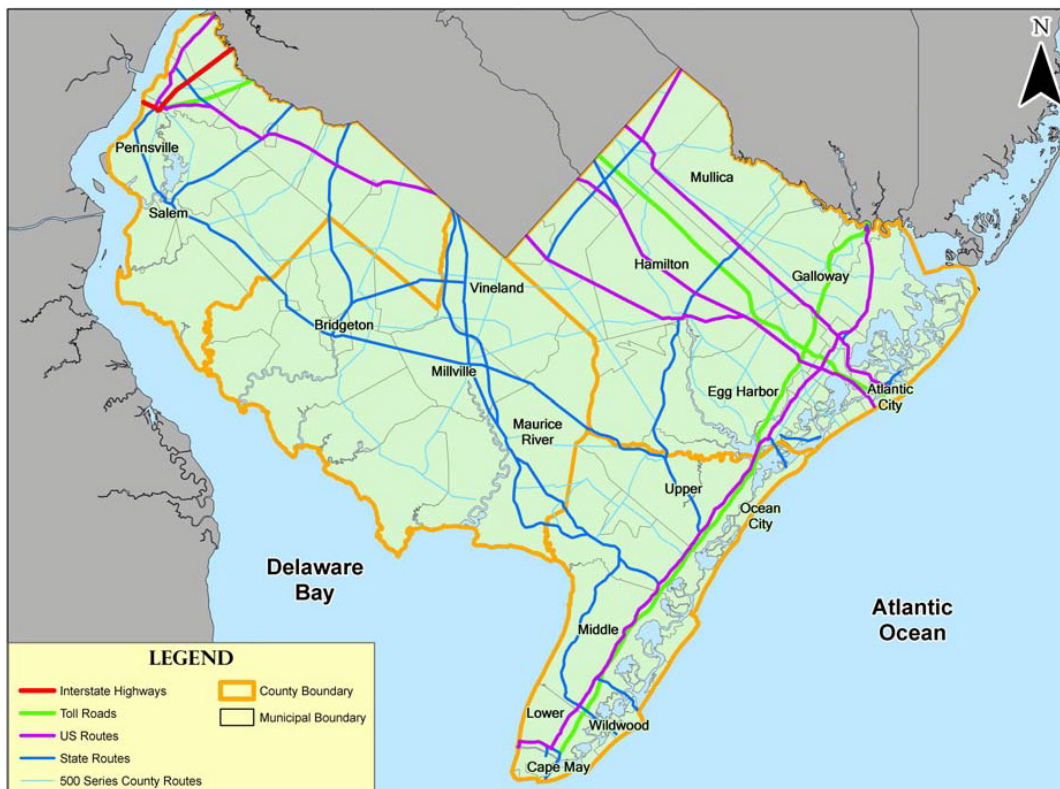
This memorandum presents a review of transportation resources in the SJTPO region. It begins with highway travel and continues on to transit, bicycle/pedestrian, and intermodal travel, including freight and goods movement as well as aviation.

## 1. Highway System

### Introduction

This section presents a review of highway travel and needs in the SJPTO region. The process begins with an overview of the highway system that describes some of the unique characteristics and principal highway facilities in the region. A conditions assessment follows, derived from data from NJDOT's management systems (Congestion, Bridge, and Pavement), as well as a safety assessment, which draws upon data from the NJDOT, the South Jersey Traffic Safety Alliance, and references the SJTPO Safety Management System. The analysis concludes with a summary of highway needs and problem assessment. This assessment uses a variety of data sources to establish highway travel performance for both the baseline (2007) and future (2035). This process makes use of the South Jersey Travel Demand Model as an analysis tool, and the model scenarios are driven by the SJTPO demographic projections.

Figure 1 - Major Roadways in the SJTPO Region



## Regional Highway System Overview

### Atlantic County

Home to world famous beaches and the center of the gaming industry on the East Coast, Atlantic County receives a significant amount of traffic on its toll, state, and county roadways. Two limited-access roadways play a major role in traffic movement in Atlantic County. The Garden State Parkway, which is four lanes in this area, runs north-south and provides beach and Atlantic City access from North Jersey and New York. The Atlantic City Expressway, also a four-lane highway, provides similar access from western New Jersey and Pennsylvania. These two roadways also provide access to Atlantic City International Airport, which serves an ever-growing passenger demand along with cargo and New Jersey Air National Guard functions.

Parallel to the Garden State Parkway, US 9 provides alternate north-south access to the shore communities of Margate, Atlantic City, and Brigantine. In the center of the county, NJ 50, which becomes CR 563 north of US 30, provides north-south movement through Mays Landing and Egg Harbor City, as well as access to the Atlantic City Expressway, US 322, US 40, and US 30. In the western portion of the county, NJ 54 passes through Buena and Hammonton, and provides similar highway connections before connecting to US 206 and Burlington County.

US 322 and US 30 run parallel to the Atlantic City Expressway and provide alternate movement from western New Jersey and Pennsylvania to Atlantic City and the shore communities, passing through Hammonton at the western edge of the county. US 40 continues east from the Delaware Memorial Bridge through Buena in the southwest corner of the county until it merges with US 322 near Atlantic City.

The Atlantic City-Brigantine Connector opened to the public in 2001. The 2.3-mile connector is a limited-access roadway linking the Atlantic City Expressway with US 30 and Atlantic City's Marina District and Brigantine City. The project includes a covered tunnel section as it passes through the city's Westside section.

### Cape May County

Due to Cape May County's recreational and tourist attractions, including miles of beaches and the Cape May Lighthouse, the County encounters significant seasonal recreational travel. The major traffic movement in Cape May County is north-south travel along the Garden State Parkway and US 9. The Garden State Parkway is a four-lane divided limited-access highway that services shore communities such as Ocean City, Sea Isle City, Avalon, Stone Harbor, Wildwood, and Cape May. US 9 runs parallel to the Garden State Parkway, and serves as an alternate north-south route in different sections of the county. These two roadways serve both inter- and intra-county travel. NJ 47 provides north-south access from areas such as Cumberland and Salem counties to the Western Cape May County shore. At its southernmost end, it turns east to carry motorists directly into Wildwood, a major destination within the County.

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The majority of east-west traffic travels along a series of county roads, which connect Ocean Drive and the seaside communities to the Garden State Parkway and US 9. West of US 9 and the Garden State Parkway, several county roads connect US 9 to NJ 47. Coupled with NJ 83, which also runs west from US 9, and CR 550 from US 9 to Woodbine, a limited network is formed across the county.

The current termination of the NJ 55 expressway in Cumberland County complicates travel to and from Cape May County from points west. This condition contributes to congestion along the supplementary routes used to complete movements from the terminus of NJ 55 to the shore, which are forced to serve conflicting local access with this regional mobility need.

### Cumberland County

A four-lane limited-access freeway, NJ 55 is available for north-south travel in Cumberland County, passing through Millville and Vineland, the largest cities in Cumberland County. The NJ 55 expressway terminates at NJ 47 south of Millville. NJ 47 runs mostly parallel to NJ 55 as a two- to four-lane principal arterial until the two run coincident and then split into NJ 47 and NJ 347. From there, NJ 47 continues into Cape May County, providing access to the shore communities. NJ 77 continues south from Salem County to Bridgeton in Cumberland County. Smaller county roads such as CR 555, which runs through Millville and Vineland, and CR 553, which runs through Bridgeton, also service north-south traffic.

East-west travel in Cumberland County is served by NJ 49, a two- to four-lane minor arterial that connects shore towns to the east with the Delaware Memorial Bridge, via Cumberland County.

### Salem County

In Salem County, the Delaware Memorial Bridge provides a major regional connection between New Jersey and Delaware. Several major highways provide access to this bridge, including I-295, the New Jersey Turnpike, and US 130 from the north, US 40 from the east, and NJ 49 from the southeast. US 40 is a four-lane principal arterial that stretches from near the Delaware Memorial Bridge at the New Jersey Turnpike to Atlantic City. US 130 provides access to and from the bridge to Gloucester County and areas to the north such as Camden and Mercer County.

### Roadway Ownership

Total linear roadway mileage in the SJTPO region is over 5,100 miles. State ownership includes 397 miles owned by NJDOT, 94 by the independent authorities and commissions<sup>1</sup>, and 45 miles by various other State agencies.<sup>2</sup> Almost all of the balance, nearly 4,600 miles, is owned by various counties and local governments.

### Electronic Tolls

Significant congestion occurs at many of New Jersey's toll collection facilities in both AM and PM peak travel hours and during many holidays and weekends. Electronic toll collection is designed to

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<sup>1</sup> Includes sections of the Atlantic City Expressway, Garden State Parkway, and New Jersey Turnpike located within SJTPO region

<sup>2</sup> Data compiled by NJDOT

reduce traffic congestion and improve air quality and traveler convenience by mitigating bottlenecks that occur at tollbooths and plazas.

The E-Z Pass electronic toll system is widely used in the eastern United States, including each state between Maine and West Virginia as well as facilities in Indiana and Illinois.<sup>3</sup> The E-Z Pass electronic toll collection is operational on all of New Jersey's tolled roadways (Garden State Parkway, New Jersey Turnpike, and Atlantic City Expressway). In the SJTPO region, the Atlantic City Expressway offers a discount to frequent patrons who sign up for the E-Z Pass Frequent User Plan.<sup>4</sup>

### Traffic Safety

The SJTPO incorporates safety considerations into the planning process through two primary venues: the Road Safety Audit Program and the South Jersey Traffic Safety Alliance.

#### Road Safety Audit Program

SJTPO advances safety in the South Jersey region by needs identification, project development, project selection, and programming, as reflected in SJTPO's Road Safety Audit (RSA) program. SJTPO annually conducts RSAs to generate improvement recommendations for roadway segments demonstrating a history of, or potential for, a high incidence of motor vehicle crashes.

An RSA is a proactive approach to improving transportation safety. An RSA is an examination of an existing or future roadway, in which independent, qualified experts report on safety issues. An RSA can be performed during any stage of a project, including planning, design, traffic control planning, construction, pre-opening, and on existing roads. In SJTPO, however, RSAs are conducted on existing roads as the primary approach to implementing safety improvements in a timely fashion.

The SJTPO RSA program answers the Federal Highway Administration's call for New Jersey MPOs to advance low-cost, quick-turnaround safety improvements. In addition, RSA recommendations may be implemented by SJTPO counties and municipalities with their own funds. For larger-scale improvements, an audit can be the basis for a Problem Statement and eventual Study and Development or TIP entry. This is especially important in light of the emphasis on safety evident in SAFETEA-LU.

Following the FY2004 RSA Pilot Program, the SJTPO conducted Road Safety Audits in Atlantic, Cumberland, and Salem counties in FY2005, FY2006, and FY2007. The procedure for selecting the sites for the audits is outlined below.

#### Site Nomination

This process is primarily qualitative, utilizing recommendations from county engineers, planners, and SJTSA traffic safety officers based on their knowledge and experience. The officials are asked to consider the potential for the safety impacts that could be realized by low-cost, quick-turnaround

<sup>3</sup> <http://www.ezpass.com/static/faq/index.shtml>, accessed April 30, 2008

<sup>4</sup> <http://www.ezpass.com/static/info/discount.shtml>, accessed April 30, 2008

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measures. SJTPO then screens the nominated sites for suitability in terms of geographic compactness, local support, local control, and available planning funds.

This process also has a quantitative component in that the sites are reviewed and ranked on crash history (a high number of total crashes, crash clusters, and crashes per mile). Crash totals and rates for these sites are obtained from NJDOT crash data.

### *Crash Data Analysis*

SJTPO also identifies RSA candidates through an extensive crash data analysis. This investigation uses two years of crash data and constitutes a “top down” approach, in that it covers all roads in the SJTPO region, and isolates those roads with the highest crash per mile history. These sites are also verified to contain the qualities of a suitable selection listed above (local control, etc.).

As result of using these two procedures, the SJTPO Road Safety Audit Program represents a systematic approach to identifying safety needs. The SJTPO has begun to develop measures of effectiveness for its safety projects and programs, beginning with seat belt use survey and analysis conducted in 2006.

Another 2006 initiative is the Western Atlantic County Road Safety Scan. This project utilized consultant assistance to conduct an investigation of programmatic safety needs (i.e., signage, striping, raised pavement markings, etc.) in a rural portion of the SJTPO region. This overview yielded low-cost measures that can be implemented quickly by County forces with local or state funds.

### **South Jersey Traffic Safety Alliance**

Teaming with the New Jersey Division of Highway Traffic Safety, the SJTPO spearheaded the creation of the South Jersey Traffic Safety Alliance (SJ TSA) in 1998. Based on its record of regional cooperation, the SJTPO Policy Board supported forming a similar four-county organization to help SJTPO carry out federally funded regional planning and project development in the region. Heading the Alliance is an Executive Board made up of twelve members, three from each county. The main purpose of the Executive Board is to make recommendations to the General Membership. These recommendations address legislative issues, committee appointments, safety programs, and training.<sup>5</sup>

The SJ TSA is a unique traffic safety organization with its goal being to integrate traffic safety into the metropolitan and state planning process by creating an alliance of traffic safety professionals from law enforcement, community education, fire, rescue, engineering, and planning to work closely with the SJTPO to decrease deaths and injuries resulting from traffic crashes. Its objectives are to:

- develop region-wide traffic safety programs;
- share successful practices;
- exchange information; and

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<sup>5</sup> <http://www.sjtsa.org/>, accessed April 8, 2004

- support capital projects geared toward traffic and pedestrian safety.

SJTSA activities have included member surveys, organized safety activities and programs, and development of a resource library. Since 1998, the SJTSA has helped SJTPO select locations for sidewalks, acquire speed trailers, and identify specific problem locations for the Regional Transportation Plan. In a reciprocating relationship, SJTPO acted on behalf the SJTSA, by reaching out to members of the County Planning Departments, county engineers, and the New Jersey Department of Transportation, to address specific safety concerns identified by SJTSA members.<sup>6</sup>

Seat belt surveys were conducted in 2006 and 2007. An analysis of the 2007 data indicated that the driver seat belt use rate in the SJTPO region is 88 percent, a dramatic increase from the 77 percent use rate in the 2006 SJTPO survey. This rate falls below the 2007 New Jersey drivers' usage rate of 92 percent, but is higher than the 2006 national average of 82 percent. The increased 2007 usage rate is attributed to fewer out-of-region visitors in the survey as well as ongoing educational and police enforcement efforts.<sup>7</sup>

The effectiveness of the SJTPO's efforts in promoting measures to assess and mitigate highway safety issues as well as educate the public regarding the important of highway safety measures is evident. The RTP update will continue to stress the importance of these measures in addressing the important safety goals for the region.

## Management Systems

A significant source of data that is available to evaluate conditions in the SJTPO region is the management system data. Information from available management systems were obtained and utilized in the development of the RTP, including information from NJDOT's Bridge Management System, Pavement Management System, and Congestion Management System, and the SJTPO Congestion Management System. Data derived from the Safety Management System was also utilized. The information is presented in the following sections.

### Bridge Management System

NJDOT employs a Bridge Management System (BMS) to maintain an inventory of all bridges with a span over 20 feet in New Jersey with information on their physical characteristics, condition, and ownership. Bridges are inspected periodically and the various characteristics are rated on numerical scale. The scale ranges from zero to nine, with a zero representing a failed condition and a nine representing an excellent condition. A bridge can be defined as *structurally deficient*, *functionally obsolete*, or both. A bridge is deemed *structurally deficient* if its deck, superstructure, substructure or culvert are rated 4 (poor) or less or if the overall structure evaluation for load capacity or waterway adequacy is rated 2 (critical) or less. *Structural deficiency* does not necessarily mean that a bridge is unsafe. It could mean that the bridge is unable to handle the vehicle loads or speeds that would

<sup>6</sup> [http://www.nhtsa.dot.gov/people/outreach/safedige/summer2002/su01\\_w11\\_NJ.htm](http://www.nhtsa.dot.gov/people/outreach/safedige/summer2002/su01_w11_NJ.htm), accessed April 8, 2004

<sup>7</sup> <http://www.sjtpo.org/fy07-seatbeltsurvey-report.pdf>, accessed April 16, 2008

normally be expected on the roadway where the bridge is located and is posted to indicate these limitations.

A bridge is classified as *functionally obsolete* if the deck geometry, underclearances (vertical and horizontal), approach roadway alignment, overall structural evaluation for load capacity or waterway adequacy are rated as 3 (serious) or less. *Functional obsolescence* could mean the width or vertical clearance of the bridge is inadequate. Bridges become *functionally obsolete* due to highway improvements, such as lane additions on the approaches to the bridge, or due to changes in freight movement technology or practice.

The overall rating given to each bridge is called the sufficiency rating, which indicates a bridge's ability to remain in service. The rating may range from 100, which represents a bridge meeting state-of-the-art standards, to zero, which represents a bridge in need of immediate repair or replacement. The physical condition of the structure is monitored by NJDOT at a minimum of once every two years to ensure that each bridge can safely carry vehicles at the posted truckload.

The primary use of the sufficiency rating is to allocate federal funds to address bridge needs. A structure is eligible for federal funds if its sufficiency rating is less than 80 and is designated as *structurally deficient* or *functionally obsolete*. If the sufficiency rating is between 50 and 80, the federal funds are applied for rehabilitation purposes only, while a sufficiency rating of less than 50 allows federal funds to be used for rehabilitation and replacement.

Data sets for three years are included in the table for the SJTPO region: 2000, 2003, and 2008. The trend line indicates some worsening in the overall state of the region's bridges during this period, with *structurally deficient* or *functionally obsolete* bridges increasing from 23 percent of the total in 2000 to 28.1 percent in 2008.

This is a significant finding, as it indicates that the region has not made measurable progress in addressing bridge needs over the eight-year period covered by the data. As the overall bridge needs are increasing throughout the state and the nation, the SJTPO must work to secure adequate funding to address priority needs, especially in light of the recent bridge failures and problems. The identification of the need for more funding to support bridge rehabilitation and replacement projects in the SJTPO region will be recommended in the RTP.

**Table 1 – Bridge Ratings in the SJTPO Region**

| Bridge                        | 2000   |            | 2003   |            | 2008   |            |
|-------------------------------|--------|------------|--------|------------|--------|------------|
|                               | Number | % of Total | Number | % of Total | Number | % of Total |
| <b>Structurally Deficient</b> | 55     | 11.5%      | 64     | 10.9%      | 78     | 14.6%      |
| <b>Functionally Obsolete</b>  | 55     | 11.5%      | 70     | 11.9%      | 72     | 13.5%      |
| <b>Neither</b>                | 368    | 77.0%      | 452    | 77.1%      | 383    | 71.9%      |
| <b>TOTAL</b>                  | 478    | 100.0%     | 586    | 100.0%     | 533    | 100.0%     |

Source: NJDOT Bridge Management System Database – June 2000  
 NJDOT Bridge Management System Database – December 2003  
 NJDOT Bridge Management System Database – January 2008

### Pavement Management System

NJDOT maintains a database with information on the current condition of pavement throughout the state of New Jersey, which is updated every two years. The most recent 2006 database was used for this report and comparison to data for 1997 and 2001 are also included. The rating system used to rank the roadways is primarily based on two criteria. The Ride Quality Index (RQI) describes the comfort level by measuring roughness. The Surface Distress Index (SDI) compiles and measures the severity of surface distresses such as cracking, patching, shoulder condition, shoulder drop, faulting, and joints. If any of these criteria is less than the specified value, then a resurfacing project longer than 6/10 of a mile may be initiated. The average Rut Depth (RD) is also taken into account, but any projects based solely on rut depth are given lowest priority.

A final pavement rating from zero to five is calculated from RQI and SDI to determine the quality of pavement. The scale is:

- 0.00 – 1.0 = Very Poor*
- 1.01 – 2.0 = Poor*
- 2.01 – 3.0 = Fair*
- 3.01 – 4.0 = Good*
- 4.01 – 5.0 = Very Good*

Table 2 summarizes the pavement condition data. Based on these data, overall pavement conditions improved between 1997 and 2001, but have since degraded; about one-half of the roadways previously rated *Good/Very Good* degraded to *Fair* between 2001 and 2006. In the SJTPO region, only 38.3 percent the roadways were reported *Good* or *Very Good* condition in 2006, and more than 4 percent are in *Very Poor* condition.

**Table 2 - Pavement Conditions in the SJTPO Region**

| Pavement Rating       | 1997  |            | 2001  |            | 2006  |            |
|-----------------------|-------|------------|-------|------------|-------|------------|
|                       | Miles | % of Total | Miles | % of Total | Miles | % of Total |
| <b>Very Poor *</b>    | 3.6   | 0.9%       | 9.9   | 2.5%       | 20.3  | 4.2%       |
| <b>Poor</b>           | 49.4  | 12.0%      | 44.5  | 11.2%      | 113.3 | 23.3%      |
| <b>Fair</b>           | 106.8 | 26.0%      | 53.6  | 13.5%      | 166.3 | 34.2%      |
| <b>Good/Very Good</b> | 250.6 | 61.1%      | 289.2 | 72.8%      | 186.5 | 38.3%      |
| <b>Total</b>          | 410.4 | 100.0%     | 397.2 | 100.0%     | 486.4 | 100.0%     |

Source: 1997 Pavement Management System, NJDOT

The data indicates a concern, as the trend is moving to a worse state of repair of the area's pavement conditions. If pavement conditions continue to deteriorate, the impact due to user cost will rise and comfort and capacity will degrade. The identification of the need for more funding to support pavement rehabilitation projects in the SJTPO region will be recommended in the RTP.

### Congestion Management Systems

The New Jersey Congestion Management System (NJCMS) is a computer program that analyzes highway and rail network files encompassing the entire state. NJCMS focuses primarily on highway

congestion and the roadway network. For the SJTPO region, the roads on the NJCMS network are interstate highways, principal arterials, and minor arterials which carry long distance traffic and through trips. This analysis tool has the capability to evaluate multimodal performance, identify the location and causes of congestion, and identify and evaluate the performance of both traditional and non-traditional measures.

The NJCMS can produce corridor-level performance measures, such as Vehicle Miles Traveled (VMT) by Level of Service (LOS), lane-miles by LOS, VMT by Volume/Capacity (V/C) ratio, and recurring vehicle delay. Roadway-level performance measures are also available, including measures that can be used to determine which roadway links meet the definition of “congestion”, defined as exceeding a threshold V/C ratio.

### **NJCMS Regional Overview**

The NJCMS data represents average travel conditions for a typical (non-summer) weekday. Traffic volumes reported represent two-way Average Weekday Daily Traffic (AWDT). AWDT indicates the number of vehicles traveling on a particular roadway on a typical weekday. However, many of the most severe problems in South Jersey occur in the summer during Friday PM peaks and weekends. Because of its design to represent overall average travel conditions, the NJCMS has severe limitation when applied to the unique travel conditions, time periods, and unusual peaking characteristics of the SJTPO region.

### ***Seasonality of Travel Patterns and Limitations of the NJCMS for the SJTPO Region***

The SJTPO region differs greatly from what is typical for the rest of the state. While New Jersey is the most densely populated state in the nation, the four South Jersey counties have a population density that is about one-third of the statewide average, and much more similar to that of neighboring Delaware. Most of the region’s population is found in the developed areas surrounding the City of Vineland and the shore communities, including Atlantic City. Nearly two-thirds of the population resides in Cape May and Atlantic counties. Much of the region is rural and undeveloped. Large sections of the Pine Barrens are found in South Jersey, as well as significant tracts of farmland, wetlands, Wildlife Refuge and Wildlife Management Areas, State Parks, and State Forests.

Tourism and recreation are among the region’s chief industries, and while Atlantic City is a significant employment destination, the region lacks other large regional employment destinations that characterize much of the rest of state. Travel patterns for tourism, recreation, and gaming industry purposes vary greatly from those of the typical daily commute and its predictable patterns of AM and PM peaks. Recreation travel destined to the Jersey Shore is highest in the warm summer months and concentrated around the weekends. Travel to Atlantic City is also highest on the weekends and often highest at night.

Consequently, seasonal variation is a significant factor in assessing South Jersey travel demand, and in using and understanding South Jersey travel data. Statewide averages illustrate that traffic volumes are typically higher during the warmer months, as people tend to travel more in summer

and less in the winter. This trend is even more pronounced in many shore communities and along the principal routes that provide access to the shore.

Data from the NJ 47/55 Corridor Study indicate several key trends: (1) travel is highest on weekends, (2) travel has a directional component, and (3) late summer travel is higher than the early summer. The summer season, especially on weekends, is traditionally the heaviest travel demand within the NJ 55 study area. Generally, average volumes during summer weekend peak periods were found to be 60-80 percent higher than average summer weekday peak period volumes. The predominant peak flows were southbound and towards the shore on Fridays and Saturdays, and the highest northbound peaks were generally observed on Sundays. The data also indicate an increase in both volumes and duration of late summer travel compared to early summer. Volumes on some routes were found to be about 10 percent higher and sustained over longer periods of time than the early summer.

Because of these trends and observations, care must be exercised in the use of NJCMS travel data for South Jersey. In particular, NJCMS travel and performance-related data such as Level of Service (LOS) and Volume-to-Capacity (V/C) ratio are typically reported for the average weekday while many of the most severe problems in South Jersey occur in the summer during Friday PM peaks and weekends. Although the NJCMS can still be useful when used as a guide it must be supplemented by data from other sources and more relevant time periods.

#### *Extent of Congestion as Reported by the NJCMS*

The NJCMS version 4.04.90 was run for 2005 resulting in calculated data such as Volume-to-Capacity (V/C) ratio, average weekday daily traffic, daily truck volumes, etc. Two key measures of effectiveness that depict how the state's roadways operate are (1) the level of congestion, and (2) the duration of congestion. As noted in the discussion of seasonality, the NJCMS data, which forms the basis of the following discussion of regional highway conditions represents average conditions for a typical (non-summer) weekday, rather than the summer Friday PM peak, which is considered the most heavily traveled day in the SJTPO region.

The level of congestion can be measured based upon the maximum volume-to-capacity (V/C) ratio. The V/C ratio is a measure of operational performance and indicates how well a given roadway segment is able to accommodate demand. A V/C ratio below 0.75 (Below Capacity) suggests that a roadway is operating well and has capacity available to accommodate growth. A V/C ratio approaching 1.0 (Approaching Capacity) suggests that a roadway is operating poorly with little capacity available for growth. A V/C ratio over 1.0 (Beyond Capacity) suggests that a roadway is operating at failing conditions with no available capacity for growth.

The amount of time a particular route is rated Approaching Capacity or Beyond Capacity is a method of quantifying traffic congestion. The Duration of Congestion statistic is a measure of the number of hours per day the V/C ratio is greater than 0.9. For example, a route with a high V/C ratio for only one hour may be less problematic for highway travelers than a route with a moderately high V/C ratio for

more than one hour. A higher Duration of Congestion statistic, therefore, indicates a longer peak traffic period and a more serious congestion problem.

The data for Duration of Congestion are averaged out to represent a typical day, and do not reflect worst-case conditions, seasonal fluctuations, or unusual single-day peaks such as special event, accidents, holidays or summer travel. As such, this analysis may depict better conditions for a given roadway than those that may be experienced by some travelers.

As shown in Table 3, the most recently available NJCMS data (2005) indicate that on a typical non-summer weekday the SJTPO region experienced an overall low level of Duration of Congestion – only 4.5 percent of the region’s roadways are congested for one or more hours per day, based on the NJCMS average day methodology. This data should be considered to be more reflective of “off-peak” conditions in the SJTPO region, rather than peak conditions as reported by the NJCMS. Two data years are included in the table, 2001 and 2005, and the data indicate some worsening of traffic congestion during this period. The percentage of SJTPO roadways experiencing at least one hour of congestion per 24-hour weekday period increased from 3.1 percent to 4.5 percent during this period.

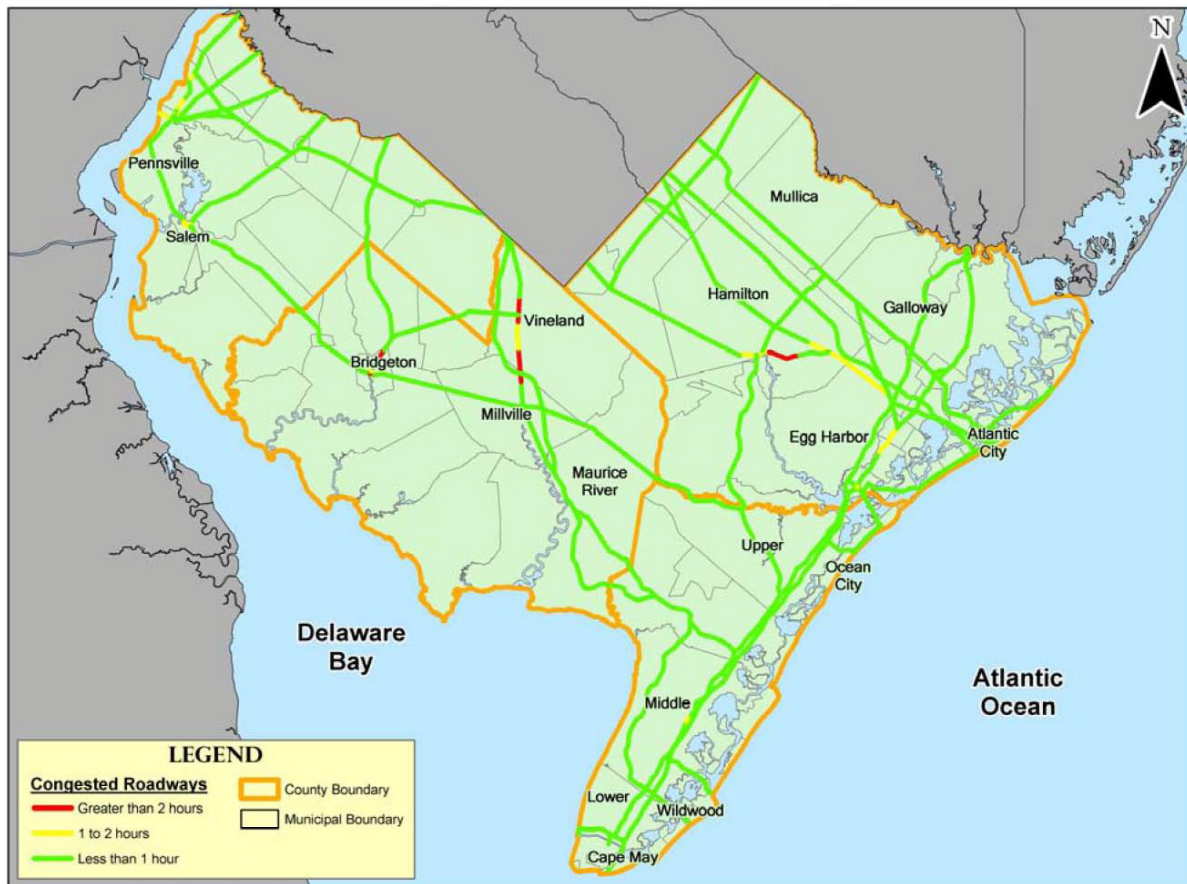
Although the results are not typical for a summer condition, off-peak travel periods are more reflected in the NJCMS data. While conditions did not significantly degrade over the four-year period, they did move in a negative direction indicating an increase in overall congestion, and resulting in an increase in delays. As the region continues to grow, this condition will likely worsen as time moves forward, and should be monitored. Figure 2 depicts the region’s congested roadways as identified by the NJCMS. These include segments of NJ 55, US 322, and NJ 40.

**Table 3 - Duration of Non Summer Congestion in the SJTPO as reported by the NJCMS**

| <b>Congested Hours Per<br/>24-Hour Weekday</b> | <b>2001</b>  |                   | <b>2005</b>  |                   |
|--|--------------|-------------------|--------------|-------------------|
|  | <b>Miles</b> | <b>% of Total</b> | <b>Miles</b> | <b>% of Total</b> |
| <b>0 to 1</b>                                  | 500.77       | 97.1%             | 514.87       | 95.5%             |
| <b>1 to 2</b>                                  | 4.00         | 0.8%              | 17.34        | 3.2%              |
| <b>&gt;2</b>                                   | 11.00        | 2.1%              | 7.16         | 1.3%              |
| <b>Total</b>                                   | 515.77       | 100.0%            | 539.37       | 100.0%            |

Source: 2001 data derived from 1990 NJDOT Congestion Management System, version 1.2  
2005 data derived from 2005 NJDOT Congestion Management System, version 4.04.90

Figure 2 - Congested Roadways in the SJTPO Region



### SJTPO Congestion Management System

As described in the previous section, the statewide Congestion Management System (NJCMS) was developed to assist in identifying and evaluating traffic congestion across the state. Although it has been useful in other parts of New Jersey, the NJCMS has proven to be less beneficial for the SJTPO. The NJCMS was designed to report on average, weekday, peak-period congestion, typically found during the AM and PM commuting hours. Because of this design, the statewide tool has severe limitations when applied to the unique travel conditions, time periods, and unusual peaking characteristics of the SJTPO region, where congestion is most severe on summer weekends for recreational and shore-oriented travel, and weekend evening travel related to the Atlantic City gaming industry.

To address these deficiencies, the SJTPO Congestion Management System (SJCMS) was conceived as a long-term, multi-phased effort to develop the data resources, tools, and procedures relevant to transportation planning efforts in the SJTPO region. Phase I of SJCMS development was completed in 2002; Phase II was completed in 2003. To date, the SJCMS development effort has completed the following milestones:

- Established the critical parameters and performance measures for identifying and evaluating congestion and applicable in the SJTPO region;

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- Defined analysis areas and applicable volume to capacity ratio (V/C) ranges for measuring congestion using the South Jersey Travel Demand Model (SJTDM);
- Packaged and applied these data resources, measures, and tools into a database tool called the *SJCMS Tracker* used to identify, track, and evaluate congested intersections, interchanges, and corridors in the four-county region;
- Defined these congested locations as *SJCMS Needs*;
- Developed a traffic monitoring program to coordinate ongoing data collection efforts with the need to monitor congestion at identified *SJCMS Need* locations; and
- Proposed future enhancements.

The SJCMS was envisioned as critical tool to support the SJTPO regional transportation planning process. Use of the SJCMS and Tracker for the Phase I and II updates identified more than 100 existing and 125 future CMS Needs.

After the completion of the CMS Need identification process, those locations with identified transportation deficiencies (these are called CMS Needs in the SJCMS process) were grouped together, into study corridors based on the various performance measures and standards set forth. CMS Need locations include deficient roadway segments and intersections that have been identified and analyzed individually, but because strategies that are appropriate for one need location may affect other need locations, it becomes necessary to examine the inter-relationships among these locations and to group together adjacent and/or contiguous locations into combined study corridors.

One of the important applications of SJCMS is to prioritize the study corridors and provide data and justification for future program activities, including more detailed technical studies. For the SJTPO region, the CMS has identified a series of deficient segments/corridors for each of the four counties, in order to evaluate priority among these corridors; four criteria have been developed to support the prioritization process. These four criteria are:

- **Area of Impact** – based on the four area types developed for CMS analysis. The order of significance is: Urban, Seasonal, Rural/Rural Center
- **Degree of Need** – based on whether the segment is an existing and/or future CMS Need
- **Performance Index** – V/C based measure based on data from the SJCMS Tool. The three categories of performance index are:
  - “Over capacity” (V/C greater than 1.00 for urban and seasonal areas and V/C greater than 0.90 for rural and rural center areas);
  - “Approaching capacity” (V/C between 0.80 and 1.00 for urban and seasonal areas and between 0.75 and 0.90 for rural and rural center areas); and
  - Links that are referred by other sources as needs but not from the SJ Model.
- **Segmentation** – segments/corridors can either be broken down into sub-segments or analyzed as a whole.

Finally, a total score for each corridor was calculated and an overall ranking was prepared with the highest scores representing the high priority study corridors. The following list is based on the 2025 data run for the SJCMS Phase II update (see Table 4). An update of the priority corridors using the 2035 SJTPM model assignment was not part of the RTP update work effort.

**Table 4 – SJTPO 2025 Study Corridors**

| County     | High  | Medium   | Special Consideration   |
|------------|---|--|---|
| Atlantic   | A24 (US 9)<br>A34 (CR 585)<br>A42 (CR 563)        | A5 (Garden State Parkway)<br>A18 (US 30 - White Horse Pike)<br>A36 (SR 152) and A46 (CR 559)<br>A44 (CR 604/CR 563)<br>A47 (CR 670)  | A24 + A34 + A42 as one study  |
| Cape May   | CM13 (US 9 - SR109 to Cape May Ferry)             | CM1 (Garden State Parkway)<br>CM41 (Garden State Parkway)<br>CM12 (US 9 - SR 47 to CR 657)<br>CM42 (US 9 - Nummytown Rd to SR 47)<br>CM43 (US 9 - CR 657 to Atlantic Co. line)<br>CM31 (SR 109) and CM46 (SR 162)<br>CM29 (CR 623) and CM44 (CR 631) | CM41 + northern portion of CM43<br>CM1 + southern portion of CM43             |
| Cumberland | CU11 (SR 47)<br>CU23 (CR 615 - East & West Blvd.) | CU21 (CR 552 - Sherman Avenue)<br>CU30 (CR 540/SR 56)  | Southern portion of CU4 (SR 55) + CU10 (SR47) + CU12 (SR 347 - Summer months) |
| Salem      |   | S8 (Main St) + S6 (US 130) + S12 (SR 140)  |   |

**2035 Screening Using SJCMS Methodologies**

Building upon the SJCMS 2025 screening, a review of needs through the 2035 analysis year was undertaken. This analysis was based on the SJCMS screening method that uses a combination of Volume-to-Capacity (V/C) ratios and area types (based on area type, size, and density), but did not incorporate the full SJCMS scoring method described in the previous section, as this full effort was not a part of the RTP update process. The analysis identified the following individual roadway segments as high priority need locations:

*Atlantic County*

- US 322      Gloucester Co Line to US 40/322
- US 30      Camden County line to Atlantic City
- US 40/322      US 322 to Atlantic City
- US 40      US 40/322 to Landis Avenue
- CR 561      US 9 to Cologne Avenue (CR 614)

*Cape May County*

- CR 657      NJ 40 to 2nd Ave/Stone Harbor
- NJ 550      CR 557 to US 9

### *Cumberland County*

|       |   |
|-------|---|
| NJ 77 | NJ 49 to NJ 56  |
| NJ 56 | NJ 77 to CR 555   |
| NJ 55 | Gloucester Co Line to NJ 47                                       |
| NJ 47 | NJ 55 to the Garden State Parkway/Wildwood (Cumberland and Salem) |

### *Salem County*

|       |                 |
|-------|-----------------|
| US 40 | NJ 55 to NJ 48  |
| NJ 49 | I-295 to CR 667 |
| NJ 45 | NJ 49 to CR 540 |

Data from both the NJCMS and the SJCMS review was factored into the identification of problem corridors for further review and study. The information was also used as part of the process of identifying the improvements that were modeled in the future year build scenario, as described further in the future year highway section of this report.

### **Safety Management System**

NJDOT maintains list of high-priority crash locations. The NJDOT requested that these data not be released in this report.

The SJTPO is currently developing a strategy to systematically identify high crash locations and rates for the entire South Jersey roadway system. This plan for a safety management system will generate safety projects and programs addressing all needs, including capital improvements, low-cost, quick-turnaround projects, operations, enforcement, and community awareness. The information is not ready for public release, and when available will be posted on the SJTPO website.

## **Highway Needs and Problem Assessment**

This section of Regional Transportation Plan presents an assessment of highway conditions for the region. The technical work program was based on the following tasks: establish baseline conditions; identify existing problem areas; and forecast future transportation conditions. This assessment is based, in part, on data from the South Jersey Travel Demand Model (SJTDM).

### **SJTPO Demographics Data Forecasting**

Population and employment growth are factors that influence the demand for travel. The number and types of trips that are made on a daily basis are influenced largely by the demographic makeup of the region. The current and projected future demographic makeup of the region – including population and employment – are critical inputs to the SJTDM. From these data, the SJTDM is capable of generating performance measures that indicate how well vehicles flow through the highway network and how the system will operate in the future.

The SJTPO is responsible for preparing and maintaining population and employment forecasts for the region. These forecasts are provided in 5-year increments and are used to support a variety of general planning efforts including the development and maintenance of the South Jersey Travel

Demand Model (SJTDM) and for use in assessing air quality conformance. The official SJTPO Demographic Forecasts are adopted by the SJTPO Board for use by SJTPO and its member agencies. The most recent forecasts include projections through the year 2035, and the year 2035 summary by county is depicted in Table 5. The forecasting process and breakdown by municipality can be found at the SJTPO website at the following locations:

<http://www.sitpo.org/pop-employ-scenarios.pdf> and  
[http://www.sitpo.org/2030\\_projections\\_municipalities.pdf](http://www.sitpo.org/2030_projections_municipalities.pdf)

Overall, both population and employment are growing by over 20 percent in the forecast period. The bulk of the region’s growth in population and employment through 2035 is projected to occur in Atlantic County, with about a 30 percent increase in both measures. This growth will result in additional trips occurring in the future years, placing a further burden on an already congested transportation system. The impact of the growth is demonstrated by the use of the SJTDM, as discussed in the following section.

**Table 5 - Regional Population and Employment Forecasts**

| County            | Population |         |         |       | Employment |         |        |       |
|-------------------|------------|---------|---------|-------|------------|---------|--------|-------|
|                   | Total      |         | Change  |       | Total      |         | Change |       |
|                   | 2007       | 2035    | Net     | %     | 2007       | 2035    | Net    | %     |
| <b>Atlantic</b>   | 276,160    | 357,570 | 81,410  | 29.5% | 155,530    | 204,913 | 49,383 | 31.8% |
| <b>Cape May</b>   | 101,780    | 116,010 | 14,230  | 14.0% | 47,440     | 56,594  | 9,154  | 19.3% |
| <b>Cumberland</b> | 155,160    | 176,060 | 20,900  | 13.5% | 64,070     | 71,053  | 6,983  | 10.9% |
| <b>Salem</b>      | 66,700     | 72,710  | 6,010   | 9.0%  | 21,010     | 25,987  | 4,977  | 23.7% |
| <b>Total</b>      | 599,800    | 722,350 | 122,550 | 20.4% | 288,050    | 358,547 | 70,497 | 24.5% |

Source: SJTPO Population and Employment forecasts, June 2006

**Baseline Highway Conditions**

The baseline for this RTP is the year 2007. The establishment of baseline conditions forms the foundation for the RTP’s technical work effort. Information was collected and analyzed for the transportation system, demographics, and air quality indicators. From these data, the existing demographic conditions as well as physical and performance characteristics of the transportation network are addressed in sufficient detail to foster an understanding of the problems and opportunities facing the region.

The South Jersey Travel Demand Model (SJTDM) is a traditional four-step model designed to replicate regional travel patterns across Southern New Jersey. It can be used to assess existing travel conditions in the region and forecast and assess future year travel and the impact and/or need for transportation improvements, based on the interaction between population and employment changes and transportation infrastructure.

The model encompasses all four SJTPO counties, plus adjacent counties in Central New Jersey and Philadelphia as well as connections to neighboring Delaware, to accurately capture the regional nature of travel in the area and the interactions among each.

The model consists of a detailed highway networks and demographic data set. The highway network includes about 12,000 lane-miles of roads of varying functional classes. Trips are generated through some 1,900 traffic zones using population and employment data sets for base and future years. These demographic data sets were developed by the SJTPO, which is responsible for the region's demographic projections. The SJTDM incorporates a mode choice model, which splits person trips into trips by auto, transit, and walk/bike modes.

This analysis is based on data from the Friday Summer PM Peak-period simulation and uses only the highway portion of the model. The highway system model serves as a good measuring stick for the impact of multi-modal strategies.

### **Future Year Highway Conditions**

The comprehensive process of multiple sources was again used to identify future problem areas within the SJTPO region for the year 2035. These sources include problem areas identified for the baseline year analysis; system performance of future condition based on data from the SJTDM, available technical sources such as the NJCMS, previous studies conducted within the subject region, and a review of the SJTPO's adopted Transportation Improvement Program (TIP) for Fiscal Years 2008-2011.

Future conditions of the "no build" network were estimated by SJTDM in terms of volume to capacity (V/C) relationship. The "no build" network consists of the existing network plus all known committed projects. The degree of congestion was grouped into two categories: "moderate" for facilities with V/C ratio of 0.80 to 1.00; and "heavy" for facilities with V/C ratio higher than 1.00. Future problem locations were identified based on these V/C criteria.

Analysis of V/C data for existing problems verified that all identified locations exhibited consistently deficient or worse capacity in the future. For intersection problems, V/C link data of the future network was analyzed at those locations instead to verify that intersection approaches exhibited consistently deficient or worse capacity in the future years.

It should be noted that the SJTDM was run for a Friday Summer peak period (3:00-7:00 pm) to identify problem locations. The peaking characteristics of facilities in the SJTPO region, with heavy recreational demands, are very different from typical commuting corridors. Many problems occur on Saturdays, Sundays, or during the week, and these problems may not have been identified through the model. Where possible, these problems were identified by other sources and included as part of the assessment.

*Future Year Travel Characteristics and Performance Indicators*

The South Jersey Travel Demand Model was used to forecast future year 2035 traffic conditions in the SJTPO area. The basis for the forecasts is the future year population and employment data for the year 2035. For comparative purposes, the model is first run with year 2007 base year demographic inputs and then run with 2035 demographic inputs. The model outputs are compared to indicate where and to what magnitude travel conditions change.

Driving the changing traffic conditions is the growth forecast in population and employment. In order to gauge the impact of this growth, highway system performance measures are used. The SJTDM generates several performance measures that indicate how well vehicles flow through the highway network and how the system will operate in the future. Indicators used include the total number of trips made, vehicle miles of travel (VMT), and vehicle hours of travel (VHT); definitions of these performance measures are as follows:

- Vehicle Miles of Travel (VMT) represents an estimate of the total miles driven by all motorists on the system in a defined time period (a year or a day, for example). It is generally considered the key statistical measure of motor vehicle travel.
- Vehicle Hours Traveled (VHT) represents the total number of hours spent driving by motorists within that same time period.

The population and employment growth is forecast to result in a 24.3 percent rise in the number of trips taken during a typical Friday summer day in the year 2035 compared to the year 2007 totals. Total vehicle miles traveled will increase about 25.6 percent, while total vehicle hours traveled will increase 51.7 percent (see Table 6).

**Table 6 – Regional Travel Indicators, 2007-2035, SJTDM, Daily Assignment**

| Daily        | 2007       | 2035 No-Build | % Change vs. No-Build | 2035 Build | % Change vs. Build |
|--------------|------------|---------------|-----------------------|------------|--------------------|
| <b>Trips</b> | 1,716,178  | 2,133,798     | 24.3%                 | 2,133,256  | 24.3%              |
| <b>VMT</b>   | 19,572,469 | 24,218,080    | 23.7%                 | 24,589,939 | 25.6%              |
| <b>VHT</b>   | 539,374    | 841,687       | 56.0%                 | 818,062    | 51.7%              |

This result indicates more trips, overall longer trips, and significantly more time spent traveling on the regional highway system. Overall trips and the travel mileage rise in about the same proportion as the population and employment growth (about 24 percent). However, the amount of time it will take to complete the trips forecast in the year 2035 more than doubles the growth in trip making, increasing by about 52 percent over the base year of 2007. This indicates that congestion will rise considerably from the impact of the additional trips, resulting in increasing delays associated with most trips. The transportation system will not be able to absorb the additional trips resulting from growth without a significant degrading of the overall traffic flow conditions, particularly in the peak

periods. This impact may be amplified under emergency conditions, as the ability to evacuate people quickly and safely will be impacted by the overall increase in traffic congestion.

The RTP will recommend measures to mitigate congestion growth from several fronts, including measures to limit the growth in demand through supporting smart growth/land use planning, promotion of alternative modes to the single occupant vehicles including transit and pedestrian and bicycling enhancements, and improvements to the highway system.

### Summary of Highway Needs and Problem Assessment

This section presents a summary of highway needs for the RTP assessment. A variety of methodologies, tools, and data sources were employed in conducting this assessment. These include traffic safety data, the NJDOT management systems (Congestion, Bridge, and Pavement), SJTPO Congestion Management System (SJCMS) and screening method from the SJCMS, SJTPO demographic data forecasts, and evaluation of existing and future highway conditions using the South Jersey Travel Demand Model (SJTDM).

Using these data and building upon the list of priority location developed for 2025 and 2035 using the SJCMS and SJTDM, a final list of high-priority locations was developed. Many of the individual roadway segments from the 2025 and 2035 lists were found to be continuous or adjacent to one another and a series of congested intersections and/or interchanges are also co-located with these segments. As such, many of the individual segments and intersections were combined into two principal high-priority corridors:

- NJ 55/47/347/657
- US 40/322

These two corridors also serve the principal through travel needs and include roadways that provide access to the major destinations of the area: the Jersey Shore and Atlantic City.

### Future Year Build Scenario

To investigate the ability of highway system to address future year needs, a future year build model run was conducted. This model run used the same 2035 demographic input as was used in the no build runs, but with an enhanced highway network. The highway network improvement focused on the two corridors identified above, NJ 55/47/347/657 and US 40/322.

Based on work done to support the New Jersey Long Range Plan effort, it is anticipated that overall financial, environmental, and resource issues will result in the ability to improve about 300 lane-miles improve about 200 interchanges/intersections overall in the state in the next 25 years. Translating these figures into the amounts expected to occur in the SJTPO region, resulted in approximately 72 lane-miles of improved roadway and 34 interchange/intersection improvements. The level of improvement will vary at a particular location, these totals represent “typical” improvements, where the roadway may be widening to add a lane in each direction, and the intersections upgraded to

provide additional capacity through geometric improvements like turning lane additions, widening, or in some cases overpasses.

PB developed modification to the highway network to reflect typical capacity increases expected to result from additional lane-miles and interchange/intersection improvements. The highway segment improvements coded into the model were split between the two corridors as follows:

- NJ 55/47/347/657 42 Lane-miles and 16 interchanges/intersections
- US 40/322 30 Lane-miles and 18 interchanges/intersections

These improvements were also transferred to the air quality conformity assessment process, as these improvements constitute the “build” condition of the assessment. The results of this assessment can be found in the technical memorandum describing the air quality assessment and the financial assessment.

### Emergency Evacuation Assessment

The SJTPO region has a very significant inflow of people throughout the recreational season. During an emergency, the ability to evacuate this large population base, which is many times greater than the year-round population, is critical. Evacuation may be necessary during severe weather, when roadways are flooded, making many impassible. The ability to provide a system that can withstand the adverse elements and reliably move a large number of persons in a limited amount of time is a fundamental need of the shore communities and region.

Demographic and travel model forecasts indicate significant growth in the region’s transportation needs. This growth and congestion translates into increased delays getting to and from the region’s shore communities particularly during the peak summer months. Delays of this magnitude can become a safety hazard should an area have to be evacuated in the event of an emergency or disaster.

The South Jersey Travel Demand Model was used to evaluate the ability of the region’s roadways to evacuate a large number of vehicles in a short time period. A scenario was developed that represents a worst case of what might happen if a sudden disaster were to trigger a full and immediate exodus of the Shore areas in Cape May and Atlantic Counties on a typical summer evening. The analysis identified critical links/bottlenecks and tested improvement measures, including constructing the NJ 55 extension.

### Methodology

The SJTPO region was divided into a series of districts, classified as either “safe” or “danger” districts, based on their proximity to shore areas. Danger areas are those districts where it was assumed that all personnel would be evacuated “from”. Safe districts are those areas where it was assumed personnel would be evacuated “to”. The district concept was developed using Storm Surge Maps produced by the Army Corp of Engineers. These maps illustrate flood-inundated areas based on

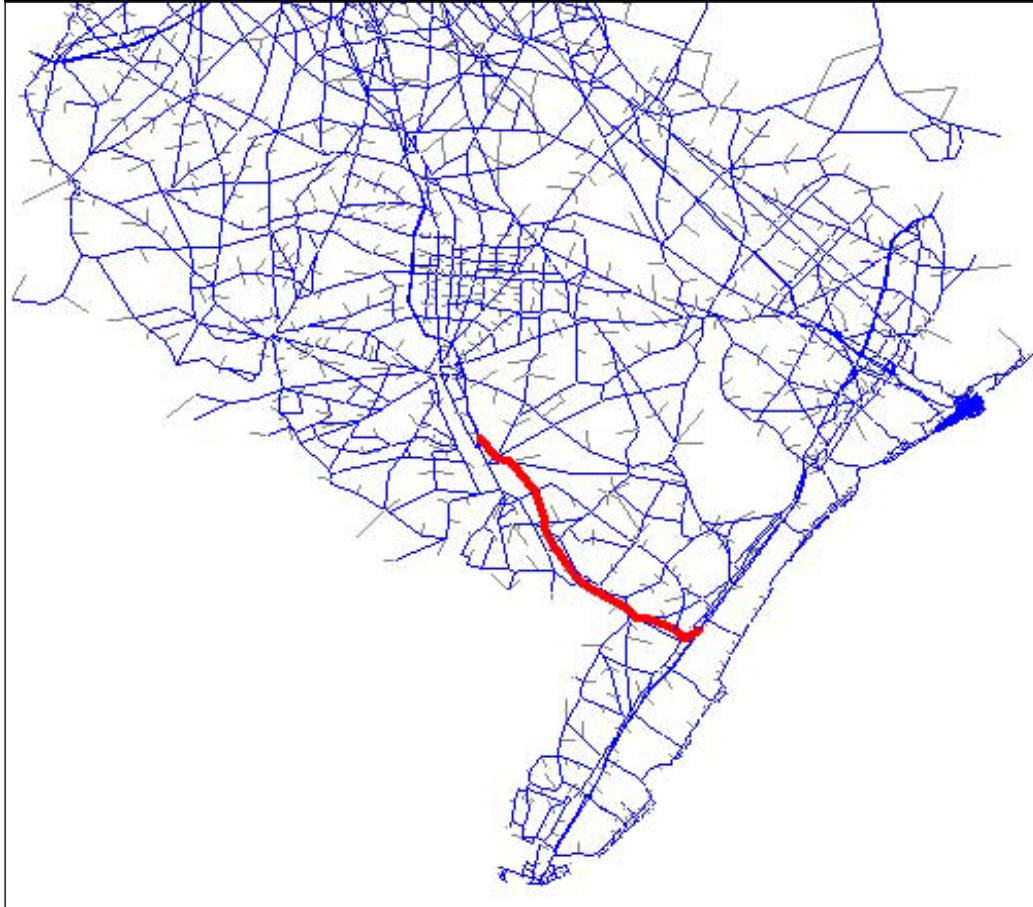
different classes of Hurricanes. The Class 4 Hurricane flood maps were used to estimate the safe and danger districts.

An evacuation trip table was developed based on the following simplified assumptions. Trips traveling from danger district to danger district (danger-to-danger) were redirected to a safe district (danger-to-safe) based on the existing danger-to-safe distribution in the district of origin. This means that local trips will cease to exist under an evacuation scenario. Inbound trips, which are defined as originating in a safe district and ending in a danger district, were reduced by 90 percent. The remaining 10 percent of the inbound trips represent emergency vehicles and personnel entering and exiting the area to facilitate the evacuation process from a staging, logistics, or rescue perspective. Trips that originate in a danger district and ending in a safe district (danger-to-safe) were left untouched. Trips that originate and end in a safe district (safe-to-safe) were left untouched.

These assumptions were applied to the SJTDM's PM peak-period trip table (3:00 to 7:00 pm) to generate a trip table designed to evacuate the typical Summer population from the SJTPO shore region to designated safety regions farther inland.

Having identified key bottleneck areas from past model runs, a what-if scenario was developed to test the region's ability to move people more effectively during an evacuation situation. This what-if, or build scenario, consists of the completion of NJ 55 from the existing terminus in the City of Millville, Cumberland County, to the Garden State Parkway (GSP), in Dennis Township, Cape May County. The proposed four-lane, limited-access freeway would be built primarily as a new road extending from NJ 55 to cross CR 548, Hunter's Mill Road, CR 550, and CR 651 before following NJ 83 on the existing, upgraded alignment to US 9 and the GSP. The proposed alignment is depicted in Figure 3.

Figure 3 - Proposed NJ 55 Alignment



The completed NJ 55 was added to the base scenario 2035 Plan network and it represents the only infrastructure change in the build network. To highlight the effectiveness of the what-if scenario, two scenarios were built for comparison. The first is a **No-Build Scenario**, which uses the Plan 2025 network and assigns to it the evacuation trip table. The second is a **Build Scenario**, which uses the upgraded NJ 55 network and assigns to it the evacuation trip table. The assignments were done for the evening peak period, which is from 3:00 to 7:00 pm on a typical July weekday. The PM peak-period results were then extrapolated over a 24-hour period to generate daily evacuation figures.

### Results

The scenario testing for the 2035 analysis year indicates that vehicle throughput in the danger districts as defined by the number of vehicle hours traveled (VHT), improves by 2.68 percent during the PM peak-period. This improved throughput would mean that an additional 2,310 vehicles could make it through the danger districts to safety during the PM peak-period. Based on an assumed vehicle occupancy of 2.0, an additional 4,620 people could make it to safety during the PM peak-period.

Hourly volume forecasts indicate that the PM peak-period represents 22.4 percent of the daily volume. Extrapolating over a 24-hour period from the PM peak-period translates into an additional

10,315 vehicles or an additional 20,630 persons that can make it to safety if the NJ 55 Freeway is completed (see table 7). These results indicate the critical need to complete NJ 55 to address emergency evacuation in the region.

**Table 7 - Evacuation Scenario Results – 2035 No-Build vs. Build**

| Daily                         | 2035 No-Build | 2035 Build |
|-------------------------------|---------------|------------|
| Vehicle Hours Traveled        | 78,610        | 76,500     |
| Base Evacuation Trips         | 86,280        | 86,280     |
| Average Vehicle Occupancy     | 2.0           | 2.0        |
| Additional Vehicles Evacuated | 2,310         | 10,315     |
| Additional Persons Evacuated  | 4,620         | 20,630     |

## 2. Transit Services

### Introduction

This section examines transit services in the SJTPO region. It includes an examination of regional transit services, including passenger rail, bus, and ferry services, ridesharing, specialized transit, and the transit issues from the Job Access and Reverse Commute (JARC) Plan.

### Regional Transit Services Overview

Although transit service is available in every county of the SJTPO region, most of this service is centralized within Atlantic County and Atlantic City in particular. The tens of thousands of commuters and tourists that work and visit the City on a daily basis provide the demand that is necessary for successful transit operations. However, due to the relatively low population densities in the region, transit service is generally sparse.

#### Passenger Rail Service

##### *Atlantic City Line*

NJTRANSIT offers commuter rail services between 30th Street Station in Philadelphia to the Atlantic City Rail Terminal seven days a week on its Atlantic City Line (ACL). The ACL includes stops in Philadelphia (30th Street), Cherry Hill, Lindenwold, Atco, Hammonton, Egg Harbor, Absecon, and Atlantic City.

##### *The Cape May Seashore Line*

Through a lease agreement with NJTRANSIT, The Cape May Seashore Line (CMSL) operates passenger rail service on segments of the 30-mile rail line between Tuckahoe and Cape May City. The service is seasonal and the rail line focuses on the recreational/tourism market. Currently rail service is provided on a 30-mile round trip between Richland and Tuckahoe, and on a 22-mile round trip between Cape May Court House, Cold Spring Village, and Cape May city. Both operations are on the former Reading Company's steel speedway to the shore. More information can be found at the company's website at <http://www.capemayseashorelines.org>.

## Passenger Bus Service

### *Local and Intrastate Bus Service*

NJTRANSIT provides a variety of bus routes within the SJTPO region, as indicated in Table 8.

**Table 8 - NJTRANSIT Local Bus Service Routes**

| <b>Route Number</b> | <b>Description</b>                                      |
|---------------------|---|
| 313                 | Philadelphia – Wildwood – Cape May via NJ 47            |
| 315                 | Philadelphia – Wildwood – Cape May via Black Horse Pike |
| 316                 | Philadelphia – Cape May Express                         |
| 319                 | New York – Atlantic City Express                        |
| 401                 | Philadelphia – Salem                                    |
| 402                 | Philadelphia – Woodbury                                 |
| 408                 | Philadelphia – Millville                                |
| 410                 | Philadelphia – Bridgeton                                |
| 423*                | Wilmington – Pennsville – Penns Grove                   |
| 551                 | Philadelphia – Atlantic City                            |

Note: \*Operated by Salem County Transit under contract with NJTransit Corporation. Source: NJTRANSIT

In addition to NJTRANSIT’s local bus service, other operators also provide local bus service. In Atlantic City, mobility is fostered by the Atlantic City Jitneys, providing service along four primary routes. Service is operated 24 hours a day, 365 days a year.

Additional shuttle bus services are also operated in the region. Tropiano Transportation, a private carrier, offers bus service from the Atlantic City International Airport to casinos within Atlantic City. Shoreline Express Tours runs a non-casino hotel/motel shuttle. Shoreline operates scheduled and on-demand shuttles along the White Horse Pike (US 30) and the Black Horse Pike (US 40) to major chain motels and hotels.

The Delaware River and Bay Authority (DRBA) also provides bus shuttles from the Cape May Ferry Terminal to the Cape May Bus Terminal. All shuttle bus service is scheduled to coincide with the arrival and departure of the ferry. According to the DRBA website, two continuously looping shuttles operate in Delaware: one between Lewes and the ferry terminal; the other among the DART Park & Ride lot, the Tanger Outlets, Rehoboth Beach, and the ferry terminal. The Cape May shuttle continuously loops between downtown Cape May and the ferry terminal. The shuttle operates with weekend service only from May to mid-June and October. During the summer tourist season, it operates daily. More information is available on the DRBA’s website at [www.cmlf.com](http://www.cmlf.com) or from their information and reservation office at 1-800-64-FERRY.

Lion Trailways provides bus shuttle services in the city of Cape May called Cape Area Transit (CAT) Shuttle System. This service operates on Fridays and weekends in the late spring and early fall, while service is provided seven days a week during the summer.

### *Interstate Commuter Bus Service*

In addition to operating commuter rail service on the Atlantic City Line, NJTRANSIT provides interstate commuter bus services in the region, linking the SJTPO region to cities such as Wilmington, Philadelphia, and New York City. Table 9 lists interstate bus services operating in the SJTPO region and the average number of weekday passenger trips.

**Table 9 - NJTRANSIT Interstate Commuter Bus Routes**

| <b>Route Number</b> | <b>Description</b>                |
|---------------------|-----------------------------------|
| 468*                | Penns Grove – Woodstown           |
| 501                 | Atlantic City – Brigantine Beach  |
| 502                 | Atlantic City – Hamilton Township |
| 504                 | Bungalow Park – Ventnor Plaza     |
| 505                 | Atlantic City – Longport          |
| 507                 | Atlantic City – Ocean City        |
| 508                 | Atlantic City – Hamilton Mall     |
| 509                 | Atlantic City – Somers Point      |
| 552                 | Atlantic City – Cape May          |
| 553                 | Atlantic City – Upper Deerfield   |
| 554                 | Atlantic City – Lindenwold        |
| 559                 | Atlantic City – Lakewood          |

Note: \*Operated by Salem County Transit under contract with NJTRANSIT Corporation.  
Source: NJTRANSIT

### *Casino Bus*

Atlantic City was visited by over 33.3 million people in the year 2007, about 16 percent of those visitors, more than 5.4 million, arrived by bus. This high number of visitors arriving by transit reduces thousands of auto trips in the City each day, improving the overall operating characteristics of the roadway system in Atlantic City and the region and reducing the overall environmental impact of automobile traffic.<sup>8</sup>

The South Jersey Transportation Authority (SJTA) actively supports programs to facilitate the casino bus operations. The SJTA oversees a bus management program to regulate all casino-related bus activities in Atlantic County, including bus intercept, bus parking, bus maintenance, site capacities, traffic management, computerized/electronic permit or medallion validation, routes of travel, discharge and loading of passengers, bus operations and activities, enforcement, and maintenance of a daily bus manifest. The SJTA operates several casino bus parking facilities, providing services to help promote the continuation of transit vehicle use, which bring about one-quarter of all visitors to Atlantic City. The environmental benefit of these visitors arriving by bus versus private automobile is significant. The SJTPO supports the SJTA's efforts to promote, manage, and enhance private bus operations within Atlantic City.

<sup>8</sup> [http://www.atlanticcitynj.com/resources\\_research.asp](http://www.atlanticcitynj.com/resources_research.asp) accessed May 5, 2008

### *The Five-Mile Beach Electric Railway Company*

The Five-Mile Beach Electric Railway Company (run by the Great American Trolley Co.) operates a trackless boardwalk tram, trackless trolleys, and "community-based services" in Cape May County. Service is provided via the Cape May Loop, Ocean City Loop, Wildwood Crest Loop, and the Rio Grande, Wildwood, and North Wildwood routes. Service is provided on some routes year-round, however, some trips are only made once or twice a day. The Wildwood/Rio Grande/Cape May Court House service has a summer and winter schedule, and during the summer only, the service to Wildwood Crest/North Wildwood operates seven days a week with many trips per day. The website has a complete listing of the routes and schedules at [http://www.gatrolley.com/h\\_fm1.htm](http://www.gatrolley.com/h_fm1.htm).

### Ferry Services

Cape May has a bi-state ferry service that offers a 17-mile, 80-minute cruise across the Delaware Bay from Lewes, Delaware to Cape May on a daily basis throughout the year. The Cape May-Lewes Ferry, owned and operated by the DRBA, provides the service via a fleet of five vehicles. This service runs 365 days a year and accommodates pedestrians, bicyclists, and autos. Information on the Cape May-Lewes Ferry is available at [www.clmf.com](http://www.clmf.com). The DRBA operates a "Three Fort Ferry Crossing" linking Fort DuPont in Delaware City, Fort Delaware on Pea Patch Island, and Fort Mott.

### Park-and-Ride Facilities

There are a number of park-and-ride facilities in the SJTPO region, both state-owned and joint-use facilities. Table 10 provides a description of the official park-and-rides available in the SJTPO region.

**Table 10 – Official NJDOT Park-and-Ride Locations in the SJTPO Region**

| County     | Location   | Town                 |
|------------|--|----------------------|
| Atlantic   | Atlantic City Expressway, Employee Intercept Lot, MP 2.0   | Pleasantville        |
| Atlantic   | Atlantic City Service Area, GSP, MP 41.2 at Jimmy Leeds Rd | Galloway Township    |
| Atlantic   | Atlantic City Bus Terminal                                 | Atlantic City        |
| Atlantic   | Pleasantville Bus Terminal                                 | Pleasantville        |
| Cape May   | Wildwood Bus Terminal                                      | Wildwood city        |
| Cape May   | Ocean City Transportation Center                           | Ocean City           |
| Cape May   | Garden State Parkway, Exit 10A Southbound                  | Cape May Court House |
| Cape May   | Cape May Transportation Center                             | Cape May             |
| Cape May   | Garden State Parkway, Ocean View Service Area              | Ocean View           |
| Cape May   | Garden State Parkway, Exit 25A Southbound                  | Ocean City/Marmora   |
| Cumberland | Vineland Bus Terminal                                      | Vineland             |

Source: <http://www.nj.gov/transportation/commuter/rideshare/prlocatc.shtm>; accessed May 5, 2008

### **Ridesharing/Alternative Commutation Services**

There is no Transportation Management Association (TMA) in Atlantic, Cape May, Cumberland, or Salem Counties. TMAs are non-profit member corporations that coordinate local commuter transportation services, including but not limited to, public transportation, vanpools, carpools, bicycling and pedestrian modes, as well as trip reduction strategies such as alternative work schedules and telecommuting, as well as providing other similar services for New Jersey businesses, employees, developers, individuals, and other groups. However, because there is some demand for ridesharing, the NJDOT has provided the Cross County Connection (CCC) TMA limited funding to provide rideshare matching in southern New Jersey. The CCC is available to assist any resident, business, or local government agency in southern New Jersey with rideshare or other transportation needs. The CCC, which operates primarily in Camden and Burlington Counties, keeps potential carpool participants on file for possible matching.

### **Specialized Transit Services**

Specialized and demand responsive paratransit services in the SJTPO region include NJTRANSIT's region-wide Access Link service, and a variety of locally sponsored programs. Access Link is NJTRANSIT's paratransit service. Additional service is provided by public agencies, county, and municipal governments, and a mixture of primarily non-profits or hospitals to serve their own client needs. While there is some level of coordination among a few providers within each of the counties, each agency operates its own transportation program independently. Most of this service is restricted to passengers who meet specific eligibility requirements that usually pertain to disability or senior citizen status or as a client to a human-service agency or organization. Although these services provide transit options to various groups, the client eligibility requirements associated with these services act to restrict travel options throughout the region as other populations that have a need for transit services (i.e., low-income persons or zero-vehicle households) often fall outside of the designated client group defined for the services.

Information on Access Link is available at [http://www.njtransit.com/as\\_al.shtml](http://www.njtransit.com/as_al.shtml)

### **Services by County**

The following sections describe specialized services' issues for each county based on recent information. A regional summary of the 2002 Job Access and Reverse Commute (JARC) Plan follows.

#### ***Atlantic County***

Atlantic County provides a wide range of transportation services to residents of the County. The Transportation Program is designed to provide necessary service to the maximum number of County residents, in conjunction with other non-profit transportation service programs throughout the County. The Division of Intergenerational Services, Transportation Unit provides services on a "first-come, first-served" basis to Qualified Residents, weekdays from 7:30 am to 5:30 pm, for both Life Essential and Life Enhancing service requests. Any county resident who is 60 years of age or older, disabled, a veteran (traveling for veteran medical services,) and/or a resident of the rural

western areas of the County are eligible. In addition, limited service is provided to TANF-eligible clients to/from various worksites. However, Atlantic County does not duplicate transportation services that are available and provided elsewhere. Therefore, residents living in institutional or assisted care facilities, along NJTRANSIT routes, and/or approved for NJTRANSIT Access Link services, may not be eligible for County services. Further eligibility information is available at (609) 645-5910.<sup>9</sup>

### *Cape May County*

Transportation services are provided through the Cape May County Fare-Free Transportation program.

As a community paratransit system, Fare Free Transportation provides [demand-response](#), [subscription](#), and modified-fixed route bus service to senior citizens, persons with disabilities, veterans, low-income individuals, and the public on a first-come, first-served basis.<sup>10</sup>

For more information, contact the County at (609) 889-3700 or email at [farefree@co.cape-may.nj.us](mailto:farefree@co.cape-may.nj.us).

### *Cumberland County*

In addition to NJTRANSIT, Cumberland County also provides four local bus routes through its in-house Transit System. For more information, go to

<http://www.co.cumberland.nj.us/content/173/251/1555/1560.aspx>

### *Salem County*

The Salem County Inter-Agency Council (IAC) is partnering with the County of Salem to bring reliable and convenient shuttle bus services to employers and residents of Salem County. The service is funded through NJTRANSIT, the Salem Health and Wellness Foundation, the County of Salem, and the TD Bank North Foundation. For more information, contact (856) 935-4194.<sup>11</sup>

### **Job Access and Reverse Commute Plan**

This plan was updated in 2002 to identify regional transit needs and service strategies to improve the ability of Work First New Jersey participants to reach places of training, job placement, and employment. Various services for low-income, transportation-dependent people are described, by county, under specialized transit services. This section summarizes the service needs identified in the Plan Update and strategies proposed to address them. No further update is available since the 2002 report.

### *Atlantic County*

#### Issues

- A pocket of residential development south of Black Horse Pike near English Creek Avenue is without transit service.

<sup>9</sup> <http://www.aclink.org/intergenerational/mainpages/transportation.asp>; accessed May 6, 2008

<sup>10</sup> <http://www.capemaycountygov.net/Cit-e-Access/webpage.cfm?TID=5&TPID=8504>; accessed May 6, 2008

<sup>11</sup> [http://www.driveless.com/pdfs/Salem\\_County\\_Emp\\_Trans\\_Serv.pdf](http://www.driveless.com/pdfs/Salem_County_Emp_Trans_Serv.pdf); accessed May 6, 2008

## South Jersey Transportation Planning Organization

- Some residents of Buena Vista Township do not have access to fixed-route transit.
- The route of the new Community Shuttle that would operate between Buena and Hammonton along NJ 54 may be too long.

### Recommendations

- Extend CARTS service hours to better serve work trips.
- Review alignment for Community Shuttle.

## *Cape May County*

### Issues

- Gaps in transit service exist along US 9, especially between Cape May Court House and Ocean View. Several nursing homes in the corridor need more transit service for their staff.
- North-south connections should be improved and more frequent transit connections to Rio Grande should be provided to give better access to the significantly increased employment opportunities associated with the new convention center in Wildwood.
- Passengers going to the Crest Haven complex must cross the Garden State Parkway; although the intersection is signalized, it is not pedestrian friendly.
- Extending hours of Fare Free service would help serve workers with non-traditional schedules.

### Recommendations

- Increase bus service between Wildwood and Rio Grande.
- Establish community bus service between Wildwood and Cape May.
- Improve pedestrian access to Crest Haven complex.
- Improve transit connections to Ocean View.
- Extend service hours for Fare Free Transportation.

## *Cumberland County*

### Issues

- A transit connection is needed between Vineland and Bridgeton along NJ 56.
- Employers along NJ 56 outside Vineland are not well-served by fixed-route transit; perhaps the Vineland Shuttle's route should be modified to serve those locations.
- A transit connection is needed between Salem and Bridgeton via NJ 49.

### Recommendations

- Extend service hours for CATS.
- Consider providing connections between Vineland and Bridgeton.
- Consider providing connections between Salem and Bridgeton.

## *Salem County*

Issues

- Service gaps have been identified around Elmer, Olivet, Norma, and Brotmanville, in the eastern part of the county, and near the Delaware River between Carneys Point, Penns Grove, and Woodstown.
- Additional transit services are needed to connect workers with the Pureland Industrial Complex in Gloucester County, as well as with those in Wilmington and Christiana, DE.
- Better transit connections are needed between Salem and Bridgeton.

Recommendations

- Extend service to Pureland.
- Improve transit connections to job opportunities in Delaware.
- Provide paratransit to serve job access transportation.
- Provide connections between Salem and Bridgeton.

On a regional basis, the Job Access and Reverse Commute Plan Update recommends developing transportation partnerships, introducing a regional or county-based mobility manager, promoting ridesharing programs, and developing an automobile ownership program.

**SJTPO Environmental Justice 2007 Update**

Environmental justice is not simply about adverse effects and discrimination, but rather is about providing equal access to the planning and decision processes that shape communities. The premise of environmental justice (EJ) is to reach out to those communities that have been historically marginalized, thus giving them a voice. In this regard, the SJTPO, like all MPOs, commissioned a public outreach strategy and commissioned the Louis Berger Group to perform an initial EJ analysis in 2002. The data at the time was limited, as the Census Bureau had not yet released all of the population tabulations for 2000. One of the key recommendations was the updating of the analysis as soon as better data was available. In that effort, this report is the update to the 2002 analysis and utilizes the latest Census, State, and Local data to define and map these communities of concern.

Whereas Executive Order 12898, and subsequent DOT orders only required the location and analysis of effects on minority populations and households under the poverty threshold populations, the SJTPO chose to expand upon those populations. It was decided that based on the low-density nature of the region, the following populations should also be included in any environmental justice program:

- Elderly populations;
- Zero-Vehicle Households;
- Disabled persons over 5 years of age; and
- Limited-English Proficient (LEP) populations.

Each of these populations has a different set of needs and thus warrants identification. In order to locate concentrations of EJ populations, a threshold needed to be developed. For the SJTPO a

concentration is defined as any block group that meets or exceeds the regional threshold, with the threshold being the regional average for any EJ population. Any block group that met or exceeded this ratio was classified as a community of concern. This was done for all EJ populations. Below is a list of the regional thresholds for each EJ population:

**Table 11 – Regional Thresholds for EJ Populations**

| Population                     | SJTPO Pop | EJ Pop  | Ratio* |
|--------------------------------|-----------|---------|--------|
| Minority                       | 565,604   | 175,298 | 31%    |
| Low-Income                     | 544,955   | 60,802  | 11%    |
| Elderly                        | 565,604   | 83,516  | 15%    |
| Zero-Vehicle Households        | 210,577   | 27,848  | 13%    |
| Mobility Impaired 5+           | 565,604   | 47,048  | 8%     |
| Limited-English Proficient HH† | 210,577   | 37,430  | 18%    |

\* Rounded to nearest whole number.

† Spanish Speaking Households: 20,841, 10% of Households

### 3. Bicycle and Pedestrian

#### Introduction

SJTPO makes bicycle and pedestrian mobility and safety a high priority by planning future initiatives and conducting safety campaigns. Each county has been active in planning efforts to further the development of bicycle and pedestrian facilities. Further, many municipalities in the SJTPO region require bicycle and pedestrian facilities in new development. Nearly every municipality in the four-county region has existing or planned bicycle and pedestrian facilities for both commuting and recreational purposes.

#### State Bicycle and Pedestrian Goals

Echoing the goals embodied in New Jersey’s Statewide Bicycle and Pedestrian Master Plan, the following five goals embody the principle that bicycling and walking are a routine part of the transportation system and should be treated as such, rather than being treated as separate modes.

- One:** Create a bicycle and pedestrian-friendly transportation infrastructure by planning, designing, constructing, and managing facilities that will accommodate and encourage use by bicyclists and pedestrians and be responsive to their needs.
- Two:** Make community destinations, transit facilities, and recreation facilities accessible and convenient to use by all types and levels of bicyclists and pedestrians.
- Three:** Continue to reform land use policies, ordinances, and procedures to maximize opportunities for walking and bicycling.
- Four:** Continue to develop education and enforcement programs that will result in reduction of crashes and a greater sense of security and confidence for bicyclists and pedestrians.

**Five:** Increase bicycling and walking by fostering a pro-bicycle and pro-walking ethic in individuals, private-sector organizations, and all levels of government.

**Table 12 - Proposed Bicycle and Pedestrian Projects**

| County   | Route         | Program                            | Description  |
|----------|---------------|------------------------------------|--|
| Atlantic | NJ 9          | Northfield Sidewalk Replacement II | New sidewalks, curbs, curb cuts, and crosswalks  |
| Atlantic | US 30/ CR 575 | Pomona Road                        | Pavement Resurfacing and/or Rehabilitation and Widening narrow pavements and Bicycle and Pedestrian Facilities |
| Atlantic | NJ 30         | Pedestrian Walkway Rt. 30          | Build a pedestrian walkway at US 30 to improve safety  |
| Atlantic | NJ 52         | Causeway Replacement Contract A    | Reconstruct bridges (no additional travel lanes) and provide Bicycle and Pedestrian Facilities                 |

### Performance Criteria

1. Transportation facilities, at a minimum, shall be planned, designed, constructed, and maintained to accommodate shared-use by motor vehicles, bicycles, and pedestrians.
2. Where appropriate, and especially when a roadway project is an integral element of a city, town, or village center development plan, transportation facilities shall be designed, constructed, and maintained to encourage pedestrian activity.
3. Where appropriate, or when a roadway project is an integral element of a bicycle transportation plan or designated bicycle facility system, transportation facilities shall be designed, constructed, and maintained to encourage use by bicyclists.
4. Pedestrian traffic shall be given primacy over motor vehicle traffic in the design of projects located within zones dedicated to pedestrian movement.
5. Bicycle traffic shall be given primacy over motor vehicle traffic in the design of projects that encourage use by bicyclists.

### Proposed Bicycle/Pedestrian Projects

SJTPO and its counties are actively engaged in a great number of bicycle and pedestrian improvements to the region's transportation system. The current Transportation Improvement Program (FY2008-2011) for the region identifies the following projects for implementation:

**Table 13 - Proposed Bicycle and Pedestrian Projects**

| County   | Route          | Program                            | Description  |
|----------|----------------|------------------------------------|--|
| Atlantic | NJ 9           | Northfield Sidewalk Replacement II | New sidewalks, curbs, curb cuts, and crosswalks  |
| Atlantic | US 30 / CR 575 | Pomona Road                        | Pavement Resurfacing and/or Rehabilitation and Widening narrow pavements and Bicycle and Pedestrian Facilities |
| Atlantic | NJ 30          | Pedestrian Walkway US 30           | Build a pedestrian walkway at Route 30 to improve safety   |
| Atlantic | NJ 52          | Causeway Replacement Contract A    | Reconstruct bridges (no additional travel lanes) and provide Bicycle and Pedestrian Facilities                 |

### Journey to Work

Bicycling and walking continue to capture relatively small percentages of regional work trips compared to other modes. The goal of smart growth development and initiatives such as NJDOT’s integrated land use and transportation plans is to create communities and road systems that are more accommodating to alternate modes including bicycling, walking, and transit.

Some areas in Atlantic and Cape May counties have high population and employment densities, as well as mixed land uses and a resort environment; these attributes are conducive to alternate modes of travel.

### Statewide Development and Redevelopment Plan

New Jersey’s communities are being increasingly designed to accommodate pedestrians and bicyclists. Centers are the focus of community activity and their core areas should be the domain of pedestrians. As such, the State Development and Redevelopment Plan seeks to change future development patterns in New Jersey by creating Centers of various kinds (Urban, Regional, Village, Town, and Hamlet) and encouraging growth and redevelopment in existing Centers. This includes providing sidewalks on both sides of all roadways in Centers, in all residential and commercial development plans in Centers, and in almost all development plans in Planning Areas 1 (Metropolitan) and 2 (Suburban). The SDRP also recommends the provision of shoulders to accommodate pedestrians and bicyclists where sidewalks are not to be provided.

### Transit Services and Intermodal Connections

There exist several strategies in linking bicyclists and pedestrians with transit services. Providing bicycle-exclusive parking facilities at transit stops and stations is effective in connecting bicyclists with transit facilities.

NJTRANSIT provides parking capacity for approximately 1,600 bicycles at its public facilities. Racks are located at 90 percent of the train stations in New Jersey, at several NJTRANSIT-owned and operated park-and-ride facilities, and at several bus terminals.

NJTRANSIT allows bicycles on transit vehicles, including trains and buses. Bicycles are permitted on all buses with bike racks or having an under floor luggage compartment. This service is on a first come, first served basis. As of 2003, half of the NJTRANSIT bus fleet was considered “bicycle friendly.” Further, bicycles can be accommodated on all NJTRANSIT buses from Atlantic City to areas south; both standard frame and collapsible bicycles are allowed on the Atlantic City Rail Line, without restriction.

### Impediments to Pedestrian and Bicycle Travel

To facilitate pedestrian and bicycle travel, the built environment must encourage walking and bicycling. Planning and design decisions must consider these users. There are many impediments throughout the region that discourage or reduce safety of bicycle and pedestrian travel.

Some common problems related to pedestrian travel include:

- Difficulty crossing streets and highways;
- Inadequate pedestrian facilities and signal clearance time;
- High-speed traffic;
- High-volume traffic;
- Sidewalk gaps or obstructions;
- Inadequate lighting;
- Lack of pedestrian advocacy groups;
- Little consideration of pedestrians by drivers; and
- Land-use patterns that discourage pedestrian usage.

Some common problems related to bicycle travel include:

- Lack of pavement width for shared roadways;
- Pavement with debris or cracks;
- Rumble strips and roadway reflectors;
- Utility covers and drainage grates;
- Lack of consideration from motor vehicles;
- Lack of bicycle parking facilities at activity centers;
- Barriers or restrictions to traveling on bus or rail with bicycles; and
- Safety issues in areas with many driveways.

### Existing Conditions

The region has a limited number of transportation-oriented designated bicycle facilities. The majority of bicycle facilities in the region are non-designated facilities consisting of paved shoulders and shared roadways. However, the existing roadways and streets in the region provide the greatest

potential resource for bicyclists. In most cases, existing roadway width, space, and surface conditions may be sufficient to allow safe bicycle travel. Under certain conditions, such as low traffic volumes and low operating speeds or where paved shoulders of adequate widths are present, the existing street and highway network can represent a cost-effective means for developing a bicycle network.

Nevertheless, despite the importance of the existing roadway network, the identification of bicycle compatible streets and highways is a complex task. The factors that need to be examined include traffic volumes, lane widths, presence, and width of shoulder, motor vehicle speeds, type of traffic, parking conditions, commercial driveways, grade, and sight distance. Therefore, to determine bicycle compatibility of area roadways, it is advisable that each be examined individually.

It is also not uncommon to find a lack of pedestrian accommodations or missing links in sidewalks in developed areas of the region as well. Pedestrian facilities include sidewalks, crosswalks, signals, overpasses, underpasses, malls, trails, and greenway paths. Sidewalks are common in urban areas but are far less common in suburban and rural areas. Sidewalks need to be continuous, accessible, and well maintained in order to be useful. Many sidewalks in the region do not meet these criteria.

Like the rest of New Jersey, the impediments listed above for both bicycle and pedestrian travel are common and many are widespread in the region. Removing barriers, such as those listed above, to bicycle and pedestrian travel are needed in the region. If bicycling and walking are to become more widespread in the region, a more bicycle-friendly and pedestrian-friendly environment must be created. Creating these more friendly environments require improvements in the engineering and operation of streets and highways and creating more compact land use forms.

As can be seen in the number of projects specifically targeted for bicycle and pedestrian accommodation in the region and the number of roadway and bridge improvements that are being designed to be bicycle and pedestrian compatible, where feasible, the SJTPO is actively engaged in making improvements to address the needs of bicyclists and pedestrians.

It is important to encourage the use of alternative modes to provide mobility, accessibility, and improve the quality of life of residents and tourists. The RTP Update will include a discussion of the need to plan and integrated transportation system that includes non-motorized modes. This is particularly true in recreational areas where walking and bicycling trips can play an important role in transportation. It is very important that pedestrian and bicyclist safety be considered and efforts be made to improve the facilities in the SJTPO region. Sharing the road and dedicated infrastructure, including sidewalks and bike trails will help improve accommodating non-motorized modes.

## ***4. Intermodal Issues***

### **Introduction**

This section of the Plan presents information on additional elements of the transportation system. Data was gathered from a variety of sources, including the New Jersey Comprehensive Freight Plan.

## Freight and Goods Movement

Findings from the New Jersey Comprehensive Freight Plan (NJCFP) work effort indicated that the majority of freight moves to, from, within, and through New Jersey by trucks, at an estimated mode share of 75 percent of all goods moved by weight. For goods movement within the state, the importance of trucks is even larger, moving about 97 percent of all goods. This mode-share is echoed in the SJTPO region.

Overall, the amount of goods that are destined to or move out of the SJTPO region is low compared to statewide totals. The four counties that make up the SJTPO area comprise a total of 11 percent of inbound truck movements, but just 2 percent of outbound truck movements. Contrast these figures to Middlesex County, where 10 percent of inbound truck movements and 14 percent of outbound truck movements occur. However, it is of interest that Cumberland County as an origin county has some of the highest origin-destination pairs for intrastate truck traffic, with the highest destination counties being Gloucester, Mercer, Camden, and Cumberland itself. This signifies the importance of trucks in moving good generated by Cumberland County to others areas of the state.

While the overall amount of truck traffic that occurs in the SJTPO region is modest, it is forecast to grow. Travel demand modeling of truck movements, as reported in the NJCFP, indicates that overall truck Vehicle Miles of Travel in New Jersey will increase by about 112 percent by the year 2030. Higher than average growth is expected in Atlantic County (over 400 percent increase), Cape May County (144 percent increase), with Cumberland and Salem growing but below the statewide average (72 percent and 92 percent respectively).

Trucks are also the dominant mode of transport in the intermodal freight business – truck to rail, truck to ship, and truck to air. There are a number of quarries in Cumberland and Cape May counties, and most of the materials from the quarries travel a portion of their trips via truck. This again demonstrates the importance of truck trips to the SJTPO economy.

Major truck routes in the region include I-295, US 130, US 40, and the New Jersey Turnpike through Salem County, NJ 47 through Cumberland and Cape May Counties, NJ 77 in Cumberland County, NJ 109 in Cape May County, and US 322, US 206, and NJ 54 in Atlantic County. A number of truck terminals are in the region with the majority of major truck terminals located in Vineland, Cumberland County. There are no high speed, high capacity routes that provide east-west connections for goods movement in the SJTPO region.

Rail is also used to move goods, accounting for about 7 percent of goods moved by weight. The short line railroad operators in the region provide a valuable service of linking area industry and businesses to the Class I railroad system through the Conrail network providing access, primarily to Norfolk Southern (NS) and CSX railroads. Short line railroads operating in Southern New Jersey include the Southern Railroad Company of New Jersey and the Winchester and Western Railroad.

### Key Freight Issues Summary

County representatives of SJTPO's Technical Advisory Committee met in February 2004 to discuss issues related to the movement of freight in the region. This meeting was held in conjunction with the Statewide Freight Plan effort. Significant issues and concerns raised at the meeting are summarized below:

- Double-stacked container freight on rail is increasing in an effort to accommodate the significant rise in freight that must be moved. Due to height restrictions, however, double-stacked containers cannot travel in southern New Jersey.
- The Delair Bridge is a major chokepoint for freight entering from Pennsylvania. An engineering analysis is needed to determine the modifications necessary to correct this problem.
- All major freight corridors in the SJTPO region should be analyzed to identify any other chokepoints (e.g., Hunter Street Bridge in Woodbury) that preclude double-stacked containers.
- Significant truck activity is causing capacity problems at many intersections and corridors across the region. Turning radii along the US 322 and 40 corridors (especially during the summer) and are very hard on pavement surfaces. This is also true to a lesser extent in the US 30 corridor (Egg Harbor is a chokepoint).
- Freight movement in Atlantic City is not a major problem since the casinos have established their own distribution centers off island; however, trucks bringing product in compete with the tour buses on local roadways and have difficulty navigating in city streets because of their size. Unlike the buses, trucks do not have designated routes in the city.
- Maintenance of rail facilities is crucial. Once rail freight capacity is lost, it will not come back.
- Freight movement in the SJTPO is inherently disadvantaged and inefficient, because of its peninsular shape. Rather than accommodating through-travel, freight routes operate as one-way spur movements, moving into and out of the region and often travel empty on the reverse leg.

### Aviation

A number of airports are located within the SJTPO region, including one commercial air carrier airport, and primary and secondary general aviation airports.

#### Atlantic City International Airport

The South Jersey Transportation Authority, an agency of the State of New Jersey, operates the terminal, runways and related facilities at Atlantic City International Airport (ACY). The Federal Aviation Administration William J. Hughes Technical Center and New Jersey Air National Guard are located at the airport. ACY is located 10 miles from downtown Atlantic City – a gaming and resort community that attracts millions of visitors annually. The airport is situated adjacent to the Atlantic City Expressway, which runs from Atlantic City to the Philadelphia metropolitan region, and intersects with the Garden State Parkway.

### General Aviation Airports

In addition to ACY, the SJTPO region is home to several smaller publicly and privately owned and operated airports including Spitfire Aerodrome (formerly Oldman’s Airport) and Millville Municipal Airport. These general aviation airports serve private passenger, agricultural, and/or commercial charter and freight aircraft (see Table 13).

**Table 14 – General Aviation Airports**

| Airports                               | Location    | County     |
|--|-------------|------------|
| Spitfire Aerodrome (formerly Oldman’s) | Oldmans Twp | Salem      |
| Buck's                                 | Bridgeton   | Cumberland |
| Cape May                               | Wildwood    | Cape May   |
| Hammonton Municipal                    | Hammonton   | Atlantic   |
| Kroelinger                             | Vineland    | Cumberland |
| Li Calzi                               | Bridgeton   | Cumberland |
| Millville Municipal                    | Millville   | Cumberland |
| Ocean City                             | Ocean City  | Cape May   |
| Piney Hollow                           | Hammonton   | Atlantic   |
| Rudy's                                 | Vineland    | Cumberland |
| Vineland-Downstown                     | Vineland    | Cumberland |
| Woodbine Municipal                     | Woodbine    | Cape May   |

Source: Economic Impact of New Jersey’s General Aviation Airports Ports

The Millville Airport and Industrial Park Access Plan was completed in 2002. The study identified a phased plan of improvements designed to improve access to the airport and adjacent industrial park area and relieve congestion on existing local access roadways. The study is described in greater detail on the SJTPO website [www.sjtpo.org](http://www.sjtpo.org).

### Ports

Salem Terminal (The Port of Salem), a port entry since 1682, is one of the oldest ports on the East Coast, and is the newest addition to South Jersey Port Corporation. Leased and operated by Salem Terminals Limited, extensive renovations are planned for this facility.<sup>12</sup>

The Port of Salem has 24 acres of private area and 3 acres of public area. It has a depth of 17 feet, and serves domestic and international vessels containing bulk cargoes. The private port ships various supplies to Bermuda at an average of two ships per week. The Southern Railroad of New Jersey serves the port and provides connections to CSX/Norfolk Southern. NJ 49 provides truck access. This port is designated as a Foreign Trade Zone and is thus excluded from US Customs regulations, which greatly reduces shipping and importing costs.

The Port of Bridgeton, currently not in operation, has a depth of 17 feet and supports barge traffic containing bulk cargoes such as gravel, lumber, and oil. Truck access is provided by NJ 49. The South

<sup>12</sup> <http://www.southjerseyport.com/facilities.asp?Type=1&SectionNumber=3&TextType=2&Is3D=0>, accessed March

Jersey Port Commission hopes to find a new tenant. There are also ports in Paulsboro and Gloucester City. There is direct rail and highway access to each of these terminal facilities.

### **Intermodal Connectors**

Intermodal connectors are defined as highways that provide access between major intermodal facilities (mainly port and rail terminals) and the National Highway System. The National Highway System (NHS) includes the interstate roadways, principal arterials, strategic highway network, and connectors (important to defense and emergency preparedness). The majority of the New Jersey State highway system is part of the NHS, including the toll roads.

There are three intermodal connectors defined in the SJTPO area. All three are served by existing NHS routes, indicating that it was not necessary to define an additional facility named as the connector. The three include:

- Atlantic City Airport, facility ID NJ35A, which is served by an existing NHS route;
- Atlantic City Rail Station, facility ID NJ38T, which is served by an existing NHS route; and
- Cape May Ferry Terminal, facility ID NJ36F, which is served by an existing NHS route.

## ***5. Tourism***

### **Introduction**

Tourism is a significant industry in the SJTPO region, and not just in Atlantic City. While the casino resorts generate the greatest number of visitors to the region, ecotourism and cultural and heritage attractions are becoming increasingly important. The importance of a transportation network adequate to move these people to their destinations cannot be overstated. Competition for tourism is very strong among states on the East Coast, and people will choose to go elsewhere if the trip is too difficult.

### **Issues and Needs Identification**

Atlantic City leads the region in employment, with employment expected to increase nearly 32 percent to over 205,000 by 2035. About 35 million people visited the casinos; attended conventions, trade shows, and other special events; and enjoyed the beaches in 2007. Similarly, the population of Cape May County increases to more than 600,000 during the summer season peak, about six times greater than the County's 2000 Census population of nearly 102,500. Tourism is the largest industry in Cape May County and generates billions of dollars annually.

A Visitor Center welcomes tourists to Salem County, where visitors can enjoy arts and music, natural areas, parks, and numerous historical sites, including Fort Mott State Park, which is served by the "Three Forts" ferry service offered by the Delaware River and Bay Authority. The Cowtown Rodeo in Pilesgrove is the oldest rodeo on the East Coast.

Cumberland County also features agri-tourism, lighthouses, nature trails, historic sites, Wheaton Village, the Maurice River (part of the National Wild and Scenic River System), and the many attractions offered by the Delaware Bay.

Transportation issues that must be addressed include the following:

- Congestion relief for NJ 55 is critical to the long-term success of the region. Its completion would improve its role as both a recreational access corridor and as the region's primary emergency evacuation corridor. The issues and benefits are discussed in greater detail in the Implementation Plan section of evacuation assessment.
- Getting to and from the region – East-west connections are limited within the region, as are access to and from Maryland and Delaware. The connections that do exist carry both local and regional travel, and are heavily congested during the summer.
- Getting around within the region – While employment will grow significantly in Atlantic City, its population will not. More and more people will commute to Atlantic City, adding to the burden already present from tourists. More local and regional transit would be welcome, as well as increased parking and more and improved facilities for bicycling and walking. The Casino Reinvestment Development Authority (CRDA) is conducting a study of the Atlantic City area to formulate an improvement program to address mobility and growth issues, including transit access.
- Signage – Way-finding signage is important to reduce visitor confusion and make trip experiences that are more positive for visitors. Variable message signs to alert travelers to changing traffic conditions and the availability of alternative routes are important to keep traffic flowing in the region.