

FINAL 7/3/2015

2040 Regional Transportation Plan Performance Report



South Jersey
Transportation
Planning Organization

www.sjtpo.org

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How are we doing?

In 2012, the South Jersey Transportation Planning Organization (SJTPO) adopted the Regional Transportation Plan 2040, a long-range blueprint that assesses existing conditions of the transportation system and identifies locations of interest for future strategies and future projects. By law, Metropolitan Planning Organizations (MPOs) that are in a non-attainment area (as SJTPO is), must update their long-range plans every four years. As the SJTPO is now at the mid-point of a four-year planning cycle, this mid-planning cycle report card assesses our progress in reaching the goals and objectives of the 2040 RTP and sets the foundation for the next long-range plan update, in 2016. In other words, what is the performance of the transportation system with respect to the vision laid out in RTP 2040? This performance report is also in alignment with the current federal transportation bill, Moving Ahead for Progress in the 21st Century (MAP-21), which puts a high premium on performance-based planning, and the proposed rules stemming from MAP-21 prescribe specific performance measures on which all MPOs must report for the next RTP and beyond.

This report assesses performance in each of the goals from the Regional Transportation Plan 2040, using the following agreed-upon indicators. Specifically, a performance indicator is a performance measure that is used to document and monitor progress towards a particular goal. While a stand-alone performance measure is usually precise and consists of a specific quantitative metric, if the metric does not assess progress towards a particular goal or objective, it may not be very useful on its own. For example, for the goal of mitigating congestion, a widely used performance measure is vehicle-miles travelled (VMT). While the statement, “VMT has declined by 5% over the last 10 years” does denote a clear trend, it would be stronger to say, “The region is meeting its goal of mitigating congestion, as indicated by the 5% decline in VMT over the last 10 years.” The goals contained in the SJTPO’s 2040 RTP and the associated indicators are listed in Table 1.

This report makes the use of a dial to indicate whether performance under a particular measure is trending in a positive direction, neutral, or in a negative direction. Determining the direction of the arrow on the dial (i.e., whether the region is making progress towards a particular goal), is based on looking at past trend data. If overall there has been positive movement towards the attainment of a particular goal (e.g., the air is getting cleaner), the dial is pointed towards the “green” part, or in positive territory. If a negative trend is depicted, (e.g., the number of traffic fatalities are increasing, (which they are not, but this is listed as an example)), the arrow would be pointed in the “red” part, or in negative territory. If the trend is neither positive nor negative, the arrow is pointing straight up. For some of these measures, there is just not enough data to establish a trend, and the information being collected will serve as a baseline for future performance reporting. In these cases, no arrow is depicted.

Table 1: 2040 RTP Performance Report: Goals and Indicators

Goal 1: Promote transportation choices for the movement of people and goods		
<p>Indicator 1.1: Is the region making progress in increasing bicycle lanes and paths?</p>		<p>Status: Yes In the SJTPO region as a whole, 43.2 miles of existing bikeways have been implemented or identified as existing since 2005, a 27% increase.</p>
<p>Indicator 1.2: Is transit ridership increasing?</p>		<p>Status: No, but has remained steady Due to the Great Recession and overall tepid economic growth since then, transit ridership has leveled off in recent years. SJTPO will continue to support policies that promote transportation choices, which include transit.</p>
<p>Indicator 1.3: Is the region making progress in increasing goods movement?</p>		<p>Status: Not Enough Information The information compiled will serve as a baseline for future comparison.</p>
Goal 2: Support the Regional Economy		
<p>Indicator 2.1: Are TIP projects benefiting Employment and Retail Centers?</p>		<p>Status: Yes 16 projects from FY 2014-2023 TIP (almost 46.6% of total Federal funds allocated to the SJTPO Region) intersect Employment and Retail Centers.</p>
Goal 3: Improve Transportation Safety		
<p>Indicator 3.1: Are traffic fatalities and serious injuries decreasing?</p>		<p>Status: Yes Between 2007 and 2012, vehicle fatalities in the SJTPO region declined by 29.6%, while serious injuries declined by 37.9%.</p>
Goal 4: Improve Emergency Evacuation		
<p>Indicator 4.1: Are SJTPO's evacuation routes in good condition?</p>		<p>Status: They are in "adequate" condition Based on the Pavement Condition Index (PCI) ratings, most of the evacuation routes in the SJTPO region are in at least "Fair" Condition.</p>

Goal 5: Mitigate traffic congestion

Indicator 5.1:

Are we driving less?



Status: No

Overall VMT has remained steady during the 5-year period from 2008 to 2012.

Indicator 5.2:

Are there fewer vehicle-hours of delay?



Status: New data source; baseline established

There is not enough historical data to determine progress towards this goal. This will serve as baseline data for future comparison.

Goal 6: Protect and Enhance the Environment

Indicator 6.1:

Has air quality improved?



Status: Yes

The design values for the two monitors located in the SJTPO region show that the region has experienced just one violation of the 2008 8-hour ozone standard (at the Brigantine monitor in 2012). As such, while the state as a whole is exceeding the 2008 8-hour ozone standards, the SJTPO region is showing a positive trend.

Indicator 6.2:

What is the region's carbon footprint?



Status: Not Enough Information

In 2010, the SJTPO region's carbon footprint was 9.94 million metric tons of CO₂-equivalents. Its emissions per capita were 13.84 metric tons of CO₂-equivalents. As this is the first year this type of data has been collected, this will serve as baseline data for future comparison.

Goal 7: Enhance the Integration and Connectivity of the Transportation System

Indicator 7.1:

Has accessibility to transit stations/bus stops improved?



Status: Not Enough Information

The information compiled will serve as a baseline for future comparison.

Goal 8: Restore, Preserve and Maintain the Existing Transportation System

Indicator 8.1:

What is the pavement condition of our roads?



Status: Not Enough Information

While the most recent Asset Management System (AMS) inventory shows that almost 46% of the total roadway mileage within the region has a Pavement Condition Index (PCI) of either “Satisfactory” or “Excellent,” this is based on just one year’s worth of data for all but Vineland and Atlantic County and as such, progress towards a goal cannot be determined. The information compiled will serve as a baseline for future comparison.

Indicator 8.2:

What is the average sufficiency rating of our bridges?



Status: Improving slightly

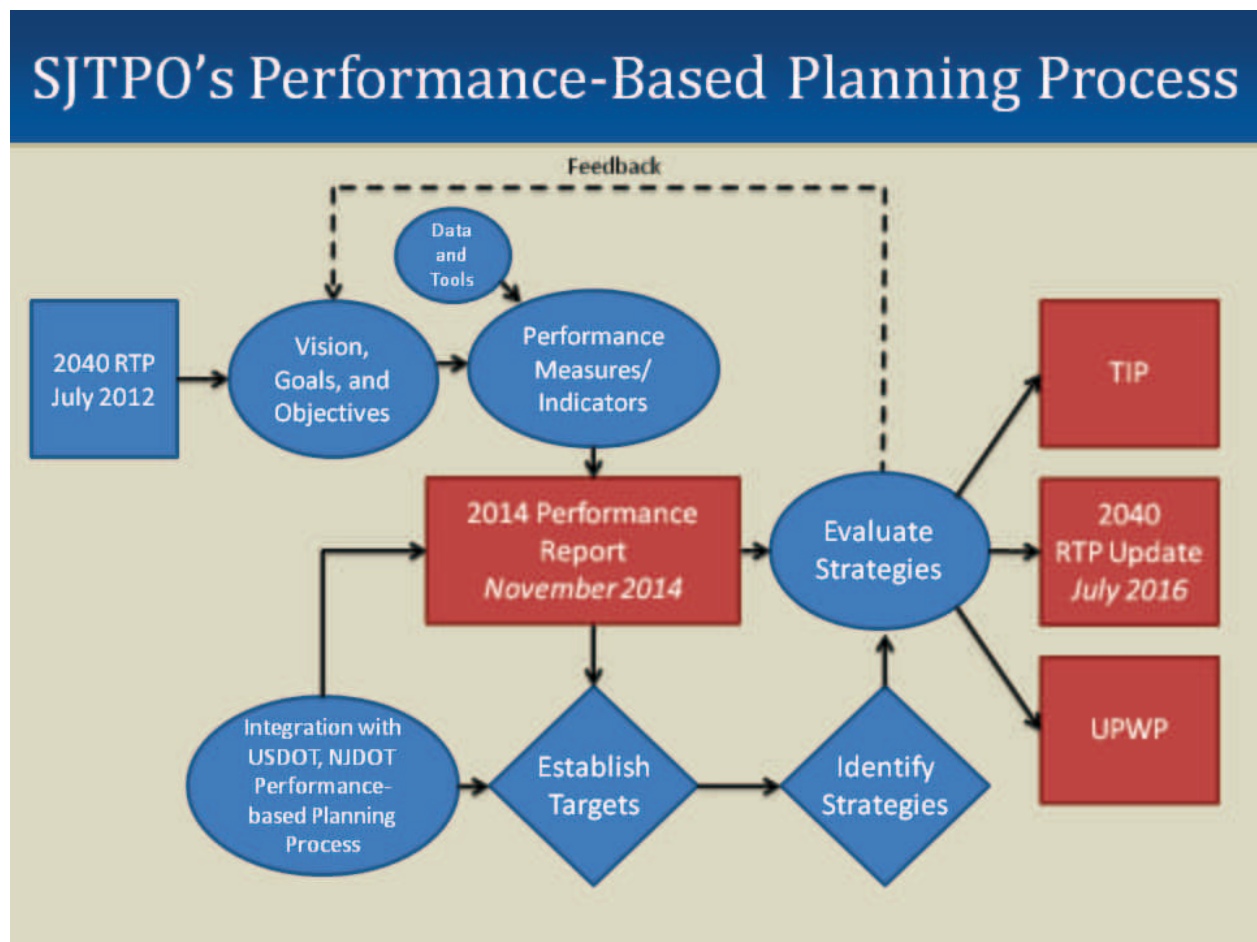
The average Sufficiency Rating for bridges in the SJTPO region in 2014 is 82.33 (Satisfactory). The rating has increased slightly but steadily since 2008. The number of “Structurally Deficient” bridges in the region has also decreased slightly by 28%.

Given the wide range of our goals and objectives, as well as the extensive amount of assets in the region, and the data that has been and is currently being compiled assessing the performance of the system, this Performance Report only presents a slice of the entire picture. It is also important to note that MPOs have limited control over outcomes in many of these areas. Air quality is a good example of this, where mobile source emissions are just one component of the overall ambient air quality. It should also be noted that in many cases, since data for many of these assets have not been collected on a regular basis until recently, (i.e., within the past year), that only one value is provided, as opposed to multiple data points, so as to establish a trend. However, once a baseline has been established, system performance can be monitored on a regular basis, an important component of the performance-based planning process.

We intend that this mid-planning cycle performance report will become a “biennial report card,” and an important element of SJTPO’s performance-based planning process. It is also possible that this list of indicators will change and that the goals of the next RTP Update will be altered, which will, in turn, alter the indicators. This RTP 2040 Progress Report represents a critical milestone, and will serve as a foundation for not only the next long-range plan, but also the planning process and future plans.

With an established a baseline on which to assess progress towards regional goals, the SJTPO is in a better position to formulate additional strategies to meet its goals. This information can also be used to establish targets, a requirement under MAP-21. Figure 1 illustrates SJTPO’s Performance-Based Planning Process.

Figure 1: SJTPO's Performance-Based Planning Process



Goal 1:

Promote transportation choices for the movement of people¹ and goods

Indicator 1.1:

Is the region making progress in increasing bicycle lanes and paths?



Status: Yes

In the SJTPO region as a whole, SJTPO's bikeway mileage has increased by 43.2 miles, or 27%, since 2005.

In addition to their purely recreational benefits, provision of bicycle lanes and paths can encourage the use of alternate forms of transportation for work, shopping, and other trips. While they do not appreciably reduce vehicular traffic volumes, they do represent one of several transportation alternatives designed to achieve this objective.

It should be noted that the provision of wide shoulders along a roadway alone is not necessarily an indicator of a user-friendly bike route. Other factors such as route length and continuity, average route traffic speed, traffic volume, and connections to desired destinations are also important and should be taken into consideration when identifying and/or designating a road segment as a bike lane. Cross County Connection (the Transportation Management Association serving South Jersey) requires that, for a road to be identified as a bike lane or route, it must have bikeway signage or road markings, or at least "share the road" signs. Another factor contributing to the high usage of bike lanes is providing the public with access to information (location, type of facility, etc.) on bike lanes and paths in their region through bikeway route brochures, web pages, and other sources.

With this in mind, SJTPO counties and municipalities have been active in efforts to identify and develop on-road and off-road bicycle facilities, and propose future bike lanes and paths. Progress made includes the following:

¹ The full goal, as stated in the 2040 RTP, is "Promote transportation choices for the movement of people **and** goods." However, as we are only focusing on the movement of people in this report, only "people" are included.

Atlantic County has identified or developed 68 miles of on- and off-road bikeways. Of particular interest from a commuting perspective are two off-road bike paths, ranging in length from 6.5 miles (a municipal facility) to 7.5 miles (a County facility along an abandoned rail line). The County also has a 7-mile designated on-road bicycle lane. The [County website](#) includes information on major bikeways in the County.

Cape May County has developed and designated almost 40 miles of bike lanes and paths, about half of which are on-road bicycle lanes. In addition to this, the county has an interactive map on [their website](#), which provides information on bicycle and pedestrian facilities and their proximity to landmarks and attractions.

Cumberland County has 85.3 miles of bikeways. The County has a 58.5-mile cross-county route running between Salem and Cape May counties, and connecting the City of Bridgeton with the Bay Shore communities and numerous scenic attractions. The County's Bike Routes Brochure, available on the [County's website](#), includes a map of this major route.

Salem County has 9.1 miles of bike facilities in the county, the longest of which is a 5-mile designated bike lane in the Pilesgrove/Woodstown area, connecting the Woodstown High School with recreation areas and other points of interest. A combination of State and County routes with wide shoulders crosses the County in an east-west direction (many segments are currently identified as proposed bike routes) and could be upgraded to designated route status with minimal improvements. Since there are few bike routes at present, no countywide bike route guides or brochures are available at this time.

Regional – In addition to bikeways designated or identified by the counties, NJDOT has mapped several major regional bicycle tour routes, including the High Point to Cape May route, the Cumberland-Salem Revolution route, the Cumberland County Bayshore Byways Ride, and the Cape May Seashore Ride (route maps available [here](#)). Although not necessarily upgraded to the designation standards for a designated bikeway, the State has identified these as reasonably safe routes for cyclists.

Performance Measure

Based on bikeway surveys conducted by Cross County Connection, the SJTPO region has a total of 201.9 miles of on-road and off-road bikeways as of July 1, 2014. Note that this covers both state and as well as local and county roads. This statistic as well as the ratio of bikeway-miles per 10,000 residents is depicted in Table 2. As can be seen in Table 3 the counties have proposed an additional 604.8 miles of bikeways, (which would be an increase of almost 300% if implemented in its entirety), to bring the existing and proposed mileage to a total of almost 807 miles. Based on the goals set by the counties, the region has, to date, completed 25 % of its desired bikeway mileage.

Table 2: Existing Bikeway-Miles per 10,000 Residents

SJTPO Counties	Existing Bikeways ⁺		2010 Residential Population		Bikeways – Miles per 10,000 Residents
	Total Miles*	Percent Of Total	Total – 2010	Percent Of Total	
Atlantic County	68.0	36%	274,549	46%	2.48
Cape May County	39.5	21%	97,265	16%	4.06
Cumberland County	85.3	39%	156,898	26%	5.44
Salem County	9.1	5%	66,083	11%	1.38
SJTPO Region	201.9	100%	594,795	100%	3.39

* Source: Cross-County Connection TMA.

+ On-road and off-road bikeways

Table 3: Existing and Proposed On-Road and Off-Road Bikeway-Miles per 10,000 Residents

Bikeway Mileage – SJTPO Region *				2010 SJTPO Population	Bikeways	
	On-Road	Off-Road	Total		Miles Per 10,000 Population	Percent of Total
Existing	155.0	46.9	201.9	594,795	3.4	25%
Proposed	536.8	67.9	604.8		10.2	75%
Total	691.8	114.8	806.7		13.56	100%

* Source: Cross-County Connection

+ On-road and off-road bikeways

From another perspective, if the counties’ existing and proposed bike mileage can be used as a reasonable estimate of what the region’s bikeway mileage should be, it roughly calculates to 13.6 miles of bikeways per 10,000 residents. At present, there are 3.4 bikeway miles per 10,000 residents. As depicted in Table 4, this is a higher rate than some of SJTPO’s contiguous counties.

Table 4: Existing Bikeway Mileage-per 10,000 residents in Contiguous Counties

	Miles of Existing Bikeways ⁺	Population (2010)	Miles of Bikeway per 10,000 residents
Camden County (2013)	72.55	513,666	1.41
Burlington County (2012)	152.75	448,731	3.40
Gloucester County (2010)	23.50	288,288	0.82
SJTPO Region (2014)	201.9	594,795	3.39

SOURCE: Cross-County Connection TMA. 2014.

+On-road and Off-road bikeways

For the most part, the SJTPO counties are actively involved in providing an impressive network of bikeways in the region, and in developing the resources that inform the public as to the existence and

location of these facilities. In general, the performance rating provided here indicates where the counties are with respect to this effort in comparison with where they want to be.

Since 2005, there has been an increase of more than 43 miles of bikeways, a 27% increase since 2005, at a rate of approximately 4.8 miles per year. Hopefully, the region will, at a minimum, continue this rate of growth, if not increase it, especially given its ambitious program for proposed expansion.

* NOTE: Information on existing and proposed bikeway mileage for all SJTPO counties is provided by Cross County Connection (CCC). Some counties have reported higher bikeway mileage; however, the CCC figures were used to ensure that uniform criteria were used to define bike lanes and routes. The data depicted in Tables 2, 3 and 4 above is current as of 2014.

Indicator 1.2:

Is transit ridership increasing?



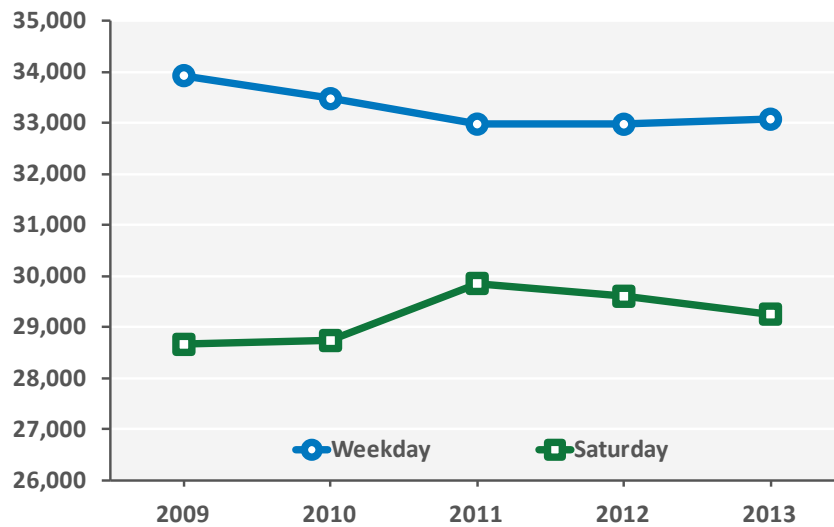
Status: No

Due to the Great Recession and overall tepid economic growth since then, transit ridership has leveled off in recent years. SJTPO will continue to support policies that promote transportation choices, which include transit.

NJ TRANSIT operates 23 bus routes, which together average approximately 41,000 vehicle-miles² daily that service at least part of the 4-county SJTPO region. In addition, NJ TRANSIT contracts out to the Atlantic City Jitney Association to provide shuttle service to the Atlantic City casinos. Figure 2, below, indicates that median weekday ridership has leveled off somewhat, while Saturday ridership is declining slightly.

² NJ TRANSIT Data. 7/2014.

Figure 2: Median Bus Ridership, SJTPO Region, 2009-2013



Source: NJ TRANSIT

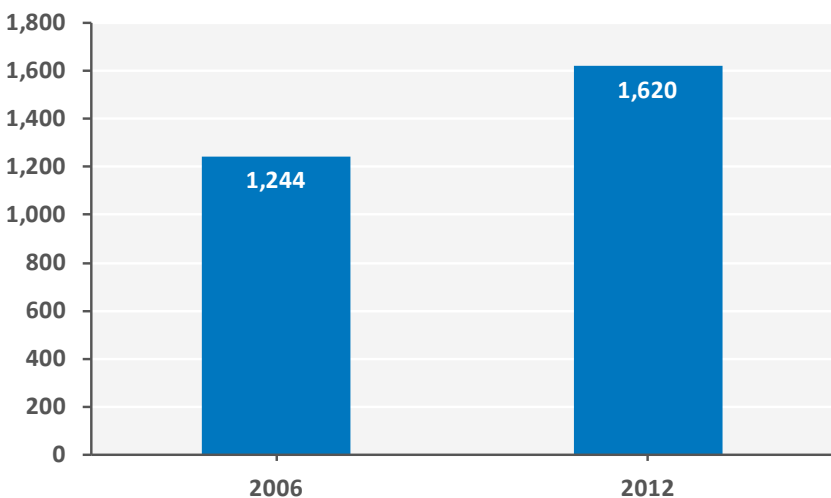
The SJTPO region has one rail transit line—the Atlantic City Rail Line. In 2010, annual passenger miles with at least one origin or destination in the SJTPO region totaled 22.6 million.³ Figure 3 shows that total ridership on the line has increased slightly since 2006. The average weekday number of trips from July to September 2012 was 3,450, a 4.5% increase from the previous year.⁴ The 2012 Atlantic City Rail Passenger Survey indicates that more than 80% of boardings on a typical weekday and weekend are from stations in the DVRPC region. However, Atlantic City (in the SJTPO region) has the highest proportion of alightings (64% on a weekday, 80% on a weekend), suggesting that it remains a strong attractor of trips. This is most likely due to casino-related travel, including casino employees. The majority of trip purposes on weekdays are work trips, while the majority of trip purposes are recreational on the weekends. The 2012 Atlantic City Rail Passenger Survey also indicated that most customers gave NJ TRANSIT high marks for customer service.⁵

³ SJTPO Regional Greenhouse Gas Emissions Inventory. June 2014.

⁴ NJ TRANSIT. Quarterly Ridership Trends Analysis--First Quarter, FY 2013. November 2012.

⁵ NJ TRANSIT. Atlantic Rail Survey. June 2013.

Figure 3: Total Boarding Passengers – Eastbound to Atlantic City, Average Weekday, ACRL



Sources: ACRL Passenger Survey, 2006, 2012; NJ Transit

In addition to the fixed route transit services, numerous paratransit services within the SJTPO region provide demand-responsive service. In 2014, under the Job Access Reverse Commute (JARC) program, these services carried approximately 1,000 trips per average weekday.⁶

Transit Accessibility

Though the South Jersey region generally has population densities that are lower than in northern parts of the state, and has a large amount of rural or semi-rural territory, many of the larger towns, cities, and other population centers in the region are connected by transit service. The SJTPO region contains 2,404 bus stops⁷ and 4 rail transit stations. Proximity to transit facilities plays an important role in peoples' ability to use the public transit system. In terms of distance, a generally accepted measure of transit accessibility is $\frac{1}{4}$ to $\frac{1}{2}$ mile walking distance from a bus stop or train station. (This corresponds to a 5 to 15 minute walk, assumed to be a reasonable time span.⁸ Figures 4 through 7 depict the Year 2010 Census Blocks that intersect a $\frac{1}{4}$ -mile buffer (a quarter-mile circle placed around each transit stop). Overall, there are 8,500 Census blocks, containing 311,484 people (more than 50% of the 2010 regional population) that at least intersect this buffer zone. As depicted in Figures 4 to 7, when measuring Census blocks that lie completely within this $\frac{1}{4}$ -mile buffer, there are 5,259 Census Blocks containing 151,337 persons, a little more than 25% of the regional population (meaning that more than 25% of the 2010 regional population lives within $\frac{1}{4}$ mile of a transit stop).

Though many people in the region live near to transit, a lower share uses transit on a regular basis in this part of the state. This is primarily due to lower densities that characterize the region – where travel origins and destinations are more decentralized, and may be out of reach of transit, or not convenient.

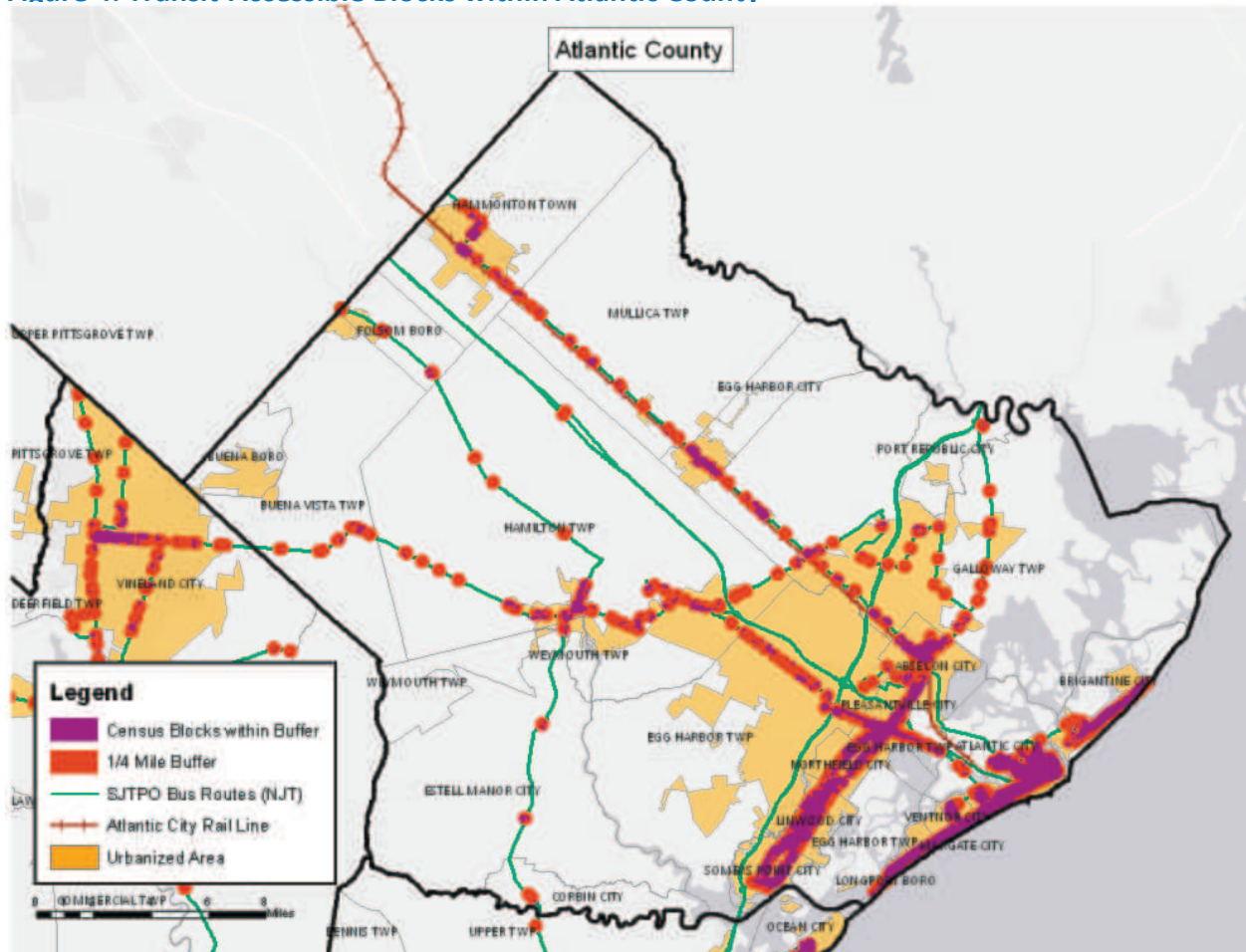
⁶ NJ JARC Applications, 2014. May 2014.

⁷ As of April, 2011.

⁸ NJ Transit. *Planning for Transit-Friendly Land Use: A Handbook for New Jersey Communities*. 1994.

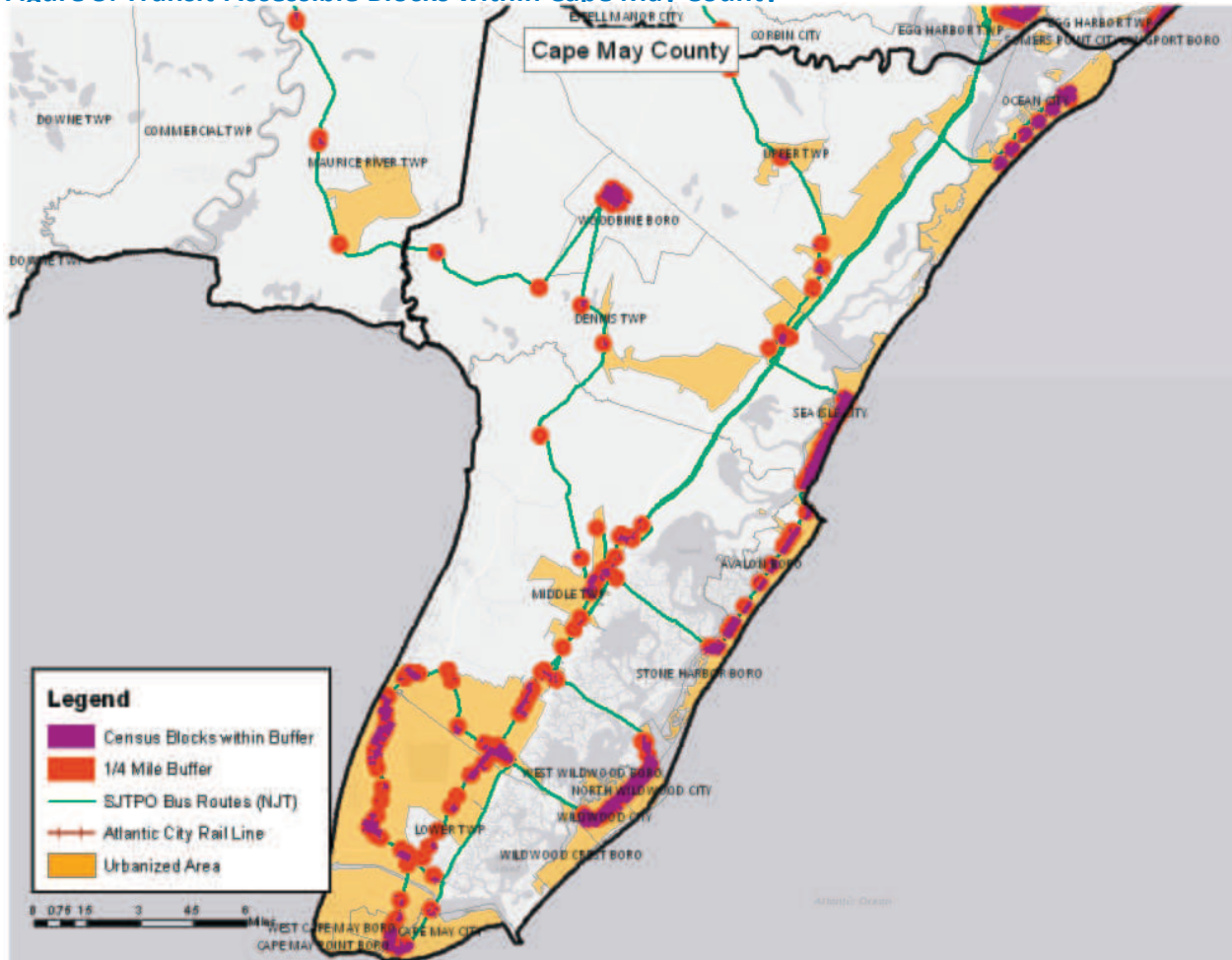
NJ TRANSIT encourages transit-oriented development for communities as they plan for future growth. By concentrating development and supportive activities such as shopping and services near to transit facilities, residents are provided with travel options that rely less on driving and more on transit, walking and biking. This provides for healthier lifestyles, supports local economic development, reduces road-related costs, and supports transit expansion.

Figure 4: Transit-Accessible Blocks within Atlantic County³



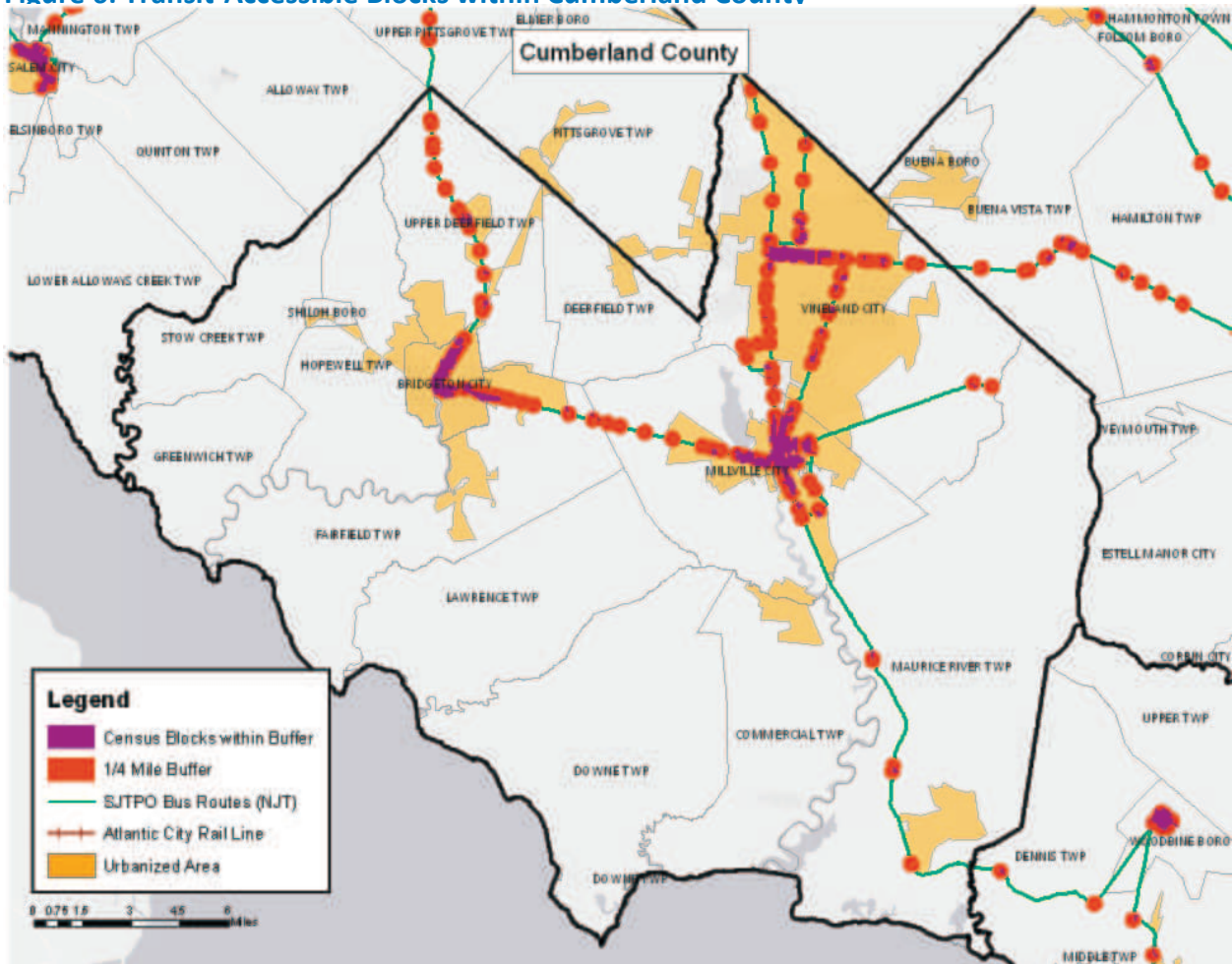
³SOURCE: 2010 Census Data, and 2011 Bus Stop Information from NJ TRANSIT.

Figure 5: Transit-Accessible Blocks within Cape May County



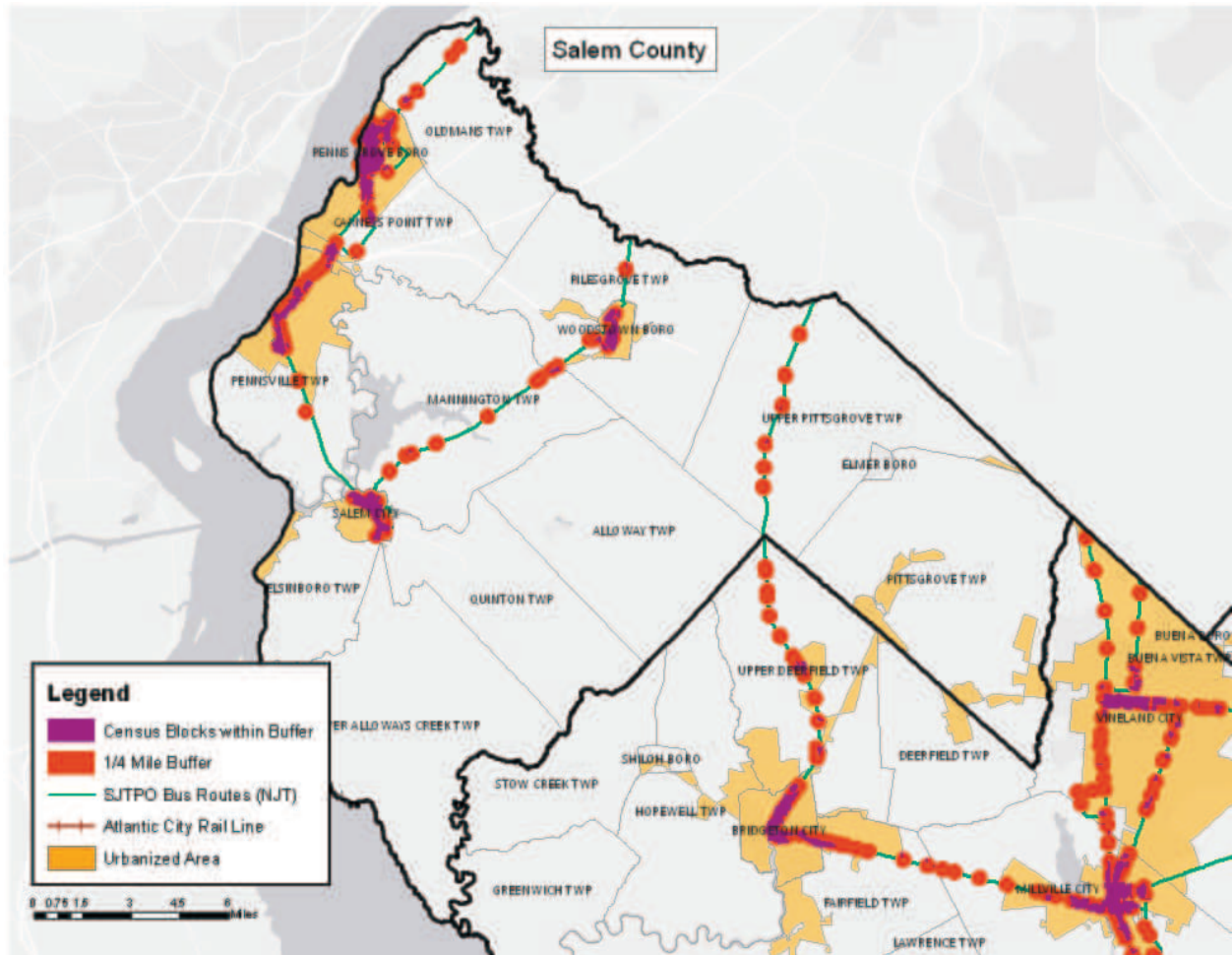
³SOURCE: 2010 Census Data, and 2011 Bus Stop Information from NJ TRANSIT.

Figure 6: Transit-Accessible Blocks within Cumberland County



³SOURCE: 2010 Census Data, and 2011 Bus Stop Information from NJ TRANSIT.

Figure 7: Transit-Accessible Blocks within Salem County³



³SOURCE: 2010 Census Data, and 2011 Bus Stop Information from NJ TRANSIT.

Indicator 1.3:

Is the region making progress in increasing goods movement?



Status: Not Enough Information

The information compiled will serve as a baseline for future comparison.

Table 5 depicts total tonnage into and out of the SJTPO region. As can be seen in Table 5 below, there is a net outflow of goods from the region to other New Jersey counties. Table 6 depicts the freight flows by value. The total tonnage of approximately 65.1 million is approximately 15.1% of the total tonnage of 431.5 million⁹ exchanged throughout the State in 2003. In 2003, over \$131.6 M worth of commodities was exchanged between the counties within the SJTPO region and outside of the region. The total value of \$131.6 M represents approximately 9.5% of the total dollar value of goods exchanged throughout the State of New Jersey. There is undoubtedly a significant amount of goods movement activity generated by the SJTPO region.

Table 5: Summary of County Freight Flows by Weight

Flow Type	Total Tonnage	Estimated Weight (Short Tons)			
		Truck	Rail	Water	Air
Inbound	24,742,912	21,637,427	1,871,881	1,232,998	606
Outbound	32,970,889	30,461,666	602,703	1,906,061	459
Internal	7,372,101	7,351,104	20,824	173	0
Total	65,085,902	59,450,197	2,495,408	3,139,232	1,065

Source: NJDOT. 2003 TRANSEARCH Freight Profile.

⁹ NJDOT. 2003 TRANSEARCH Freight Profile.

Table 6: Summary of County Freight Flows by Value

Flow Type	Total Value (\$ Million)	Estimated Weight (Short Tons)			
		Truck	Rail	Water	Air
Inbound	\$84,883.6	\$78,634.1	\$1,821.5	\$4,422.2	\$5.9
Outbound	\$41,182.7	\$33,084.7	\$1,579.9	\$6,514.5	\$3.6
Internal	\$5,594.1	\$5,538.8	\$54.8	\$0.5	\$0.0
Total	\$131,660.4	\$117,257.6	\$3,456.3	\$10,937.1	\$9.5

Source: NJDOT. 2003 TRANSEARCH Freight Profile.

As data of this type is frequently expensive and difficult to obtain, it is quite old. For future reports, SJTPO will attempt to obtain more recent information with which to compare this data.

Goal 2:

Support the Regional Economy

Indicator 2.1:

Are TIP projects Benefiting Employment and Retail Centers?



Status: Yes

Sixteen projects from FY 2014-2023 TIP (almost 46.6% of total Federal funds allocated to SJTPO Region) intersect Employment and Retail Centers.

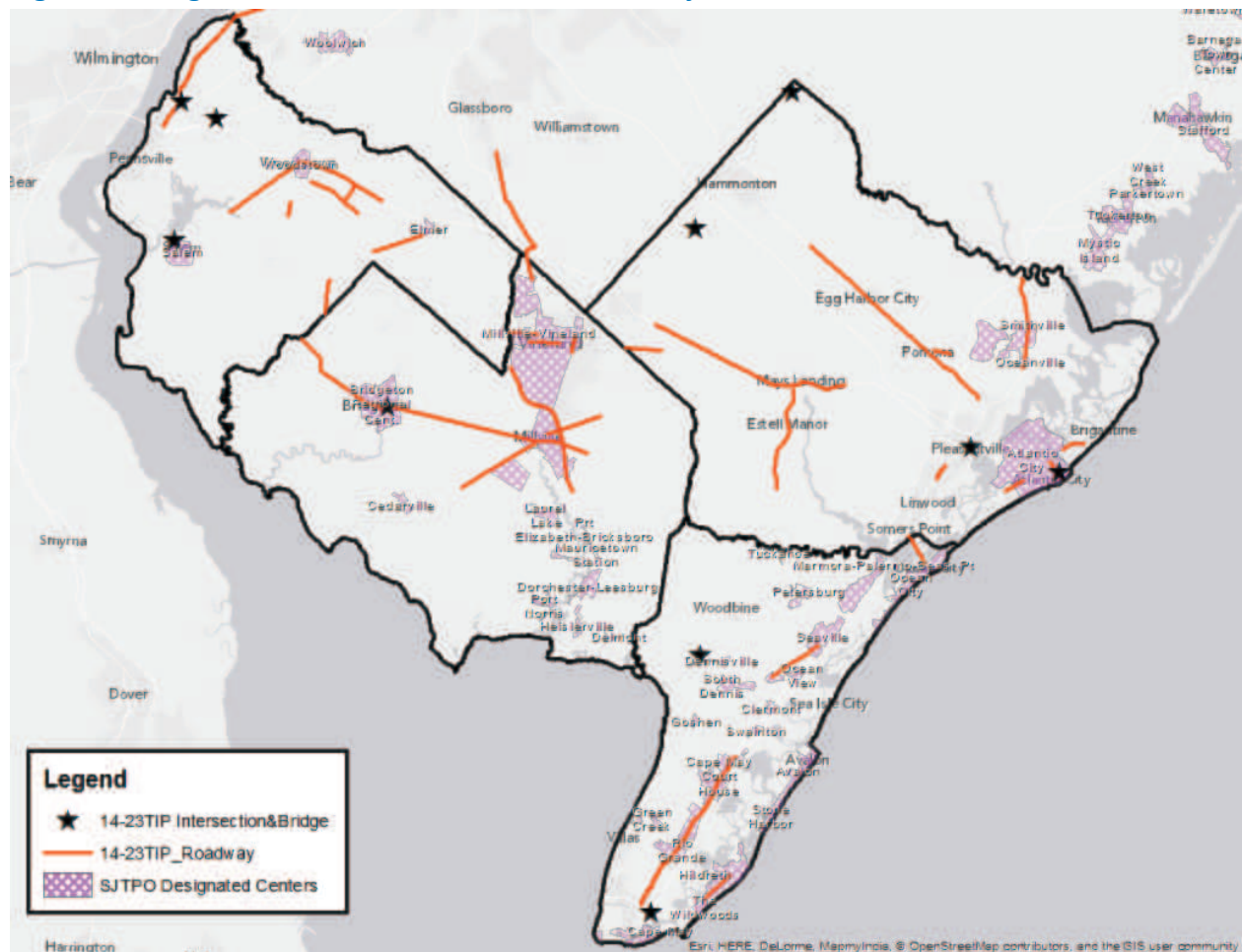
One of the 2040 RTP's goals is "Support the Regional Economy," and one of the main goals of New Jersey's State Development and Redevelopment Plan (SDRP), adopted in 2001, is to "maintain and revitalize Urban Centers." For this analysis, designated Centers of the SDRP are being used as a proxy for employment and retail centers. Encouraging and promoting growth in the Centers is also a more environmentally sustainable form of development, resulting in lower land consumption and energy consumption, as well as lower public service costs. Job and population growth is also encouraged in the Centers.¹⁰ As such, accessibility to the jobs located in these Centers would, in theory, help to improve the regional economy. To measure this indicator, SJTPO's 2014-2023 TIP projects were overlaid onto the regional transportation network to see if they were actually impacting these centers.

As shown in Figure 8, SJTPO's TIP investments impact many of the designated Centers (39 in total)¹³. Two Centers intersect TIP intersection and bridge projects, while 13 Centers intersect TIP roadway projects. Conversely, 13 TIP roadway projects and three bridge and intersection projects directly intersect Centers.

In total, 28 projects, with total costs of more than \$157 million over the next 10 years, will have some impact on the Designated Centers. This is a little less than 50% of total SJTPO project funds (\$336.7 million programmed from FY 2014 through 2023), showing that some Federal investment is directed towards Designated Centers.

¹⁰ In the analysis, in addition to Designated Urban Centers, Designated Towns (DTs), Designated Villages (DVs), and Regional Centers (RCs) were included.

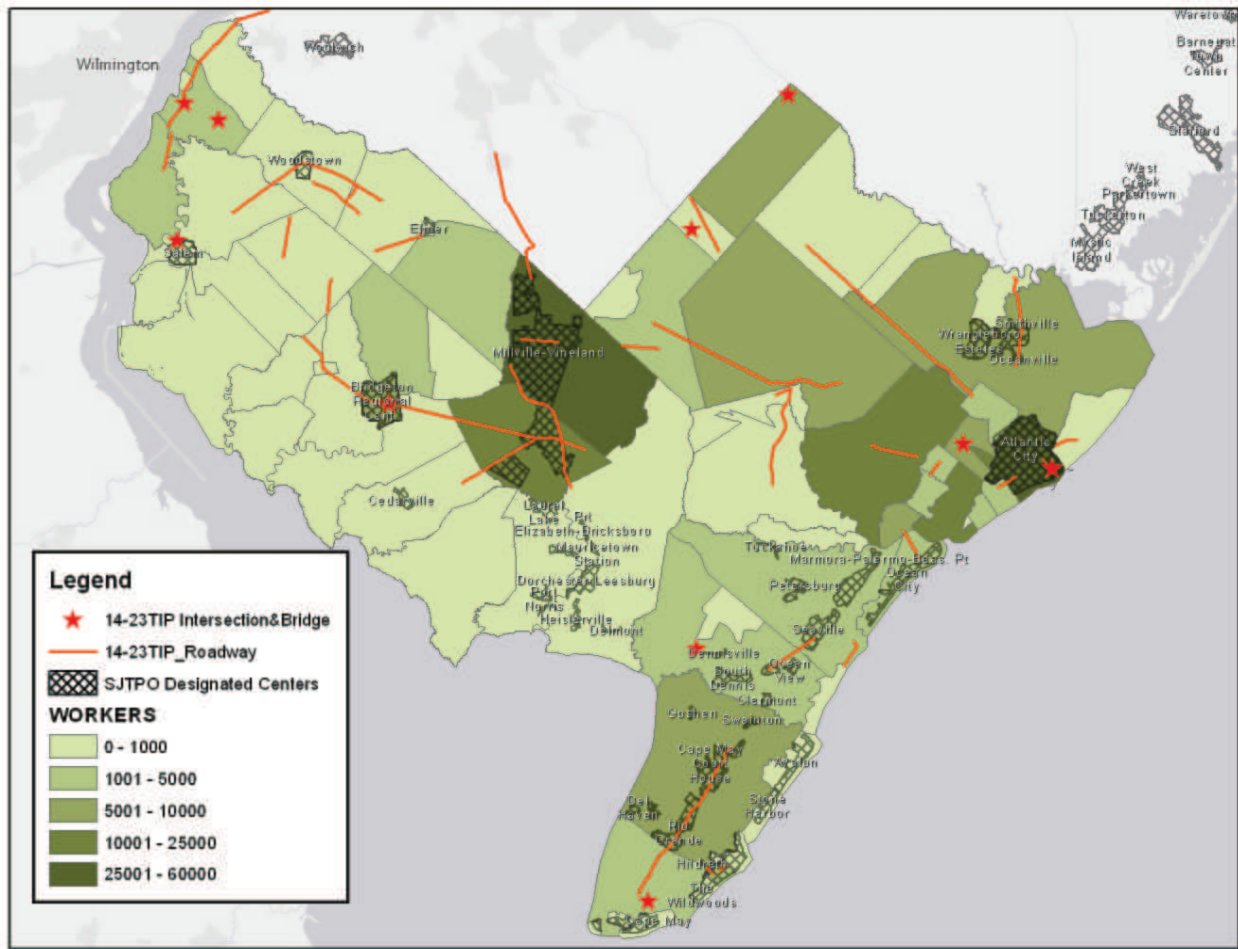
Figure 8: Designated Centers and 2014-2023 TIP Projects



SOURCE: NJ Department of State. Office for Planning Advocacy.

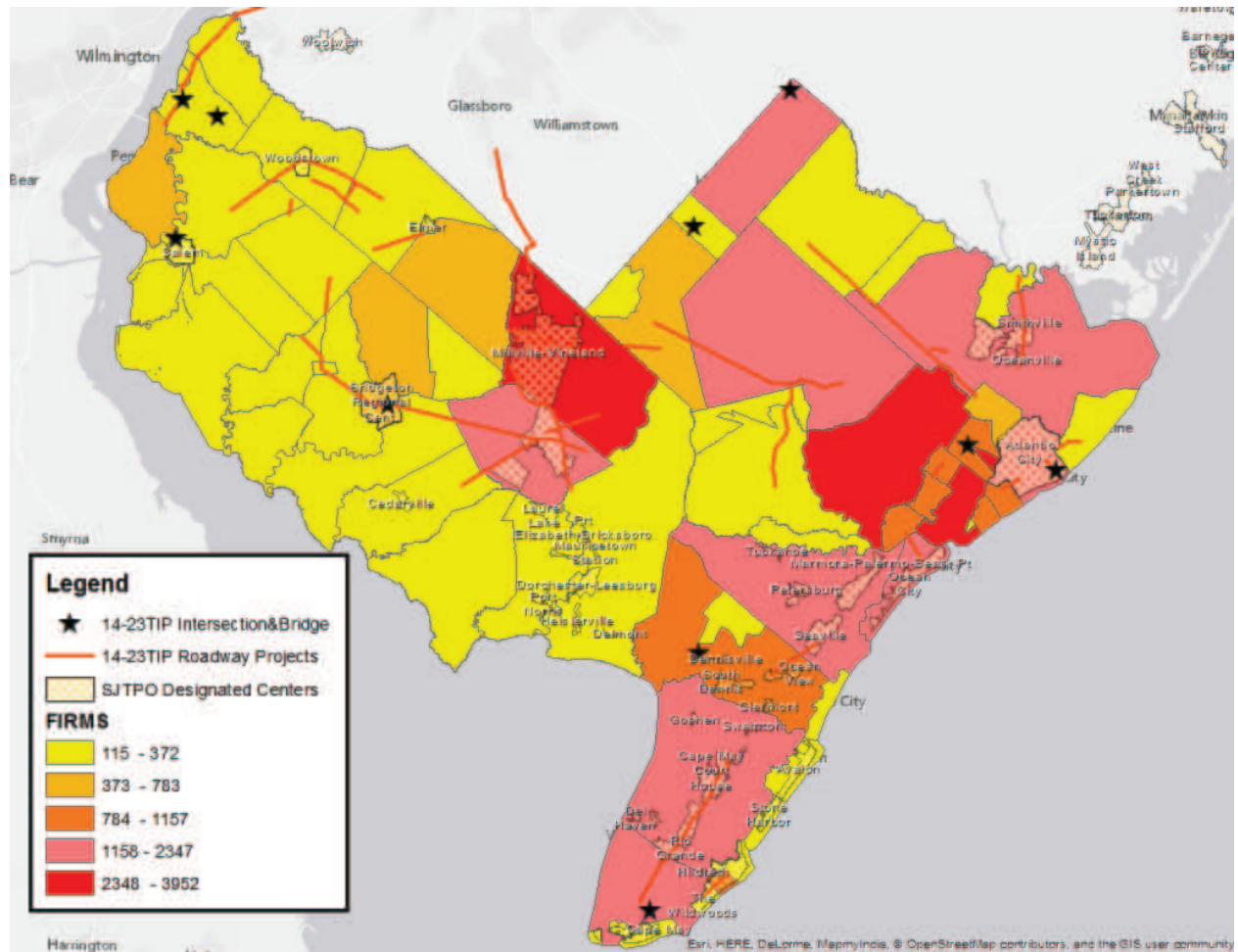
As can be seen by Figure 9, below, the highest number of workers is, for the most part, concentrated in Designated Centers such as Vineland and Atlantic City. This would suggest that the Centers are functioning as centers of the current economy. There are a few areas, such as Egg Harbor Township and Middle Township that do have a sizable number of workers, but are not designated as centers. Similar to number of workers, the cities with the highest number of firms are also “Designated Centers,” as depicted by Figure 10. As current employment distribution is concentrated largely within these “Centers,” the SJTPO region is making some progress in the goal of “Supporting the Regional Economy.” One strong caveat that should be noted here is that numerous factors outside the purview of the SJTPO affect the regional economy and are not discussed here.

Figure 9: Workers by Municipality, 2007



SOURCE: NJDOL (Worker Data)

Figure 10: Firms by Municipality, 2007



SOURCE: NJDOT (Firm Data)

Goal 3:

Improve Transportation Safety

Indicator 3.1:

Are traffic fatalities and serious injuries decreasing?



Status: Yes

Between 2007 and 2012, vehicle fatalities in the SJTPO region declined by 29.6%, while serious injuries declined by 37.9%.

Transportation Safety

Transportation safety is measured using the number of traffic fatalities and serious injuries in the SJTPO region. The fatality data is from the Fatality Analysis Reporting System (FARS). The serious injury data is from the Rutgers University Plan4Safety system, which uses NJDOT traffic records. For the purposes of this report, the USDOT defines as a “fatality” any injury which results in the death of a person at the time of the motor vehicle accident, or within 30 days of the accident,¹¹ while a “serious injury” is represented by a road user that was identified as incapacitated as a result of a crash, according to the NJDOT traffic records.

Trends within the Region

Comparing figures over time provides some insight into performance compared to previous time periods. Analysis of safety trends and improvements, such as reduction in fatality and injury rates is an ongoing activity at SJTPO. SJTPO employs a multi-pronged approach as espoused by the US Department of Transportation (USDOT) of “Engineering, Enforcement, Education and Emergency Services,” (sometimes referred to as the 4 “E’s”), to reduce the number of crashes, fatalities, and injuries, including roadway safety projects, programs, and driver education. However, it is important to note that there are other factors that impact fatality and injury trends, such as vehicle safety technology, vehicle-miles travelled, weather, and driver behavior.

Comparison with other Areas

Comparing SJTPO's performance to State (New Jersey) and national statistics is another monitoring method. Vehicle Miles Traveled (VMT) is factored into the statistics to make these regions more

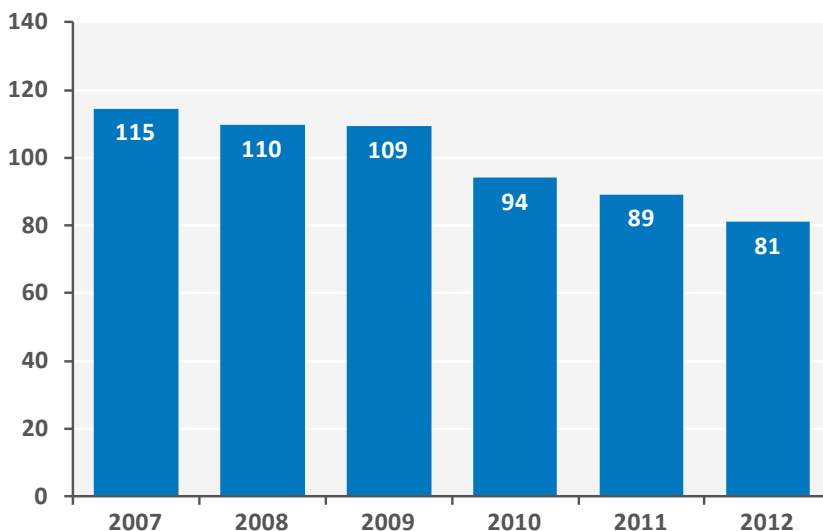
¹¹ At: <http://www.fmcsa.dot.gov/regulations/title49/section/390.5>.

comparable.¹² For example, the SJTPO region has a higher percentage of rural roads compared to the State as a whole (33% vs. 15%). SJTPO also has a higher percentage of rural VMT compared to the State as a whole (24% vs. 6%).

Transportation Safety Performance

SJTPO's Transportation System Performance is measured by the total number of fatalities and serious injuries adjusted for VMT using a five-year rolling average. This is consistent with the measure in USDOT's proposed Safety Performance Measure Rule, as required by MAP-21. The SJTPO region experiences a relatively small number of fatalities and incapacitating injuries during any given year. Since the year-to-year changes for these figures can be high relative to their yearly total, the average for a five-year period is more relevant for identifying trends. Figure 11 displays the five-year rolling average of fatalities for the SJTPO region from 2007 through 2012. Total traffic fatalities have been decreasing throughout the region.

Figure 11: SJTPO Region Fatalities (5-Year Rolling Average)

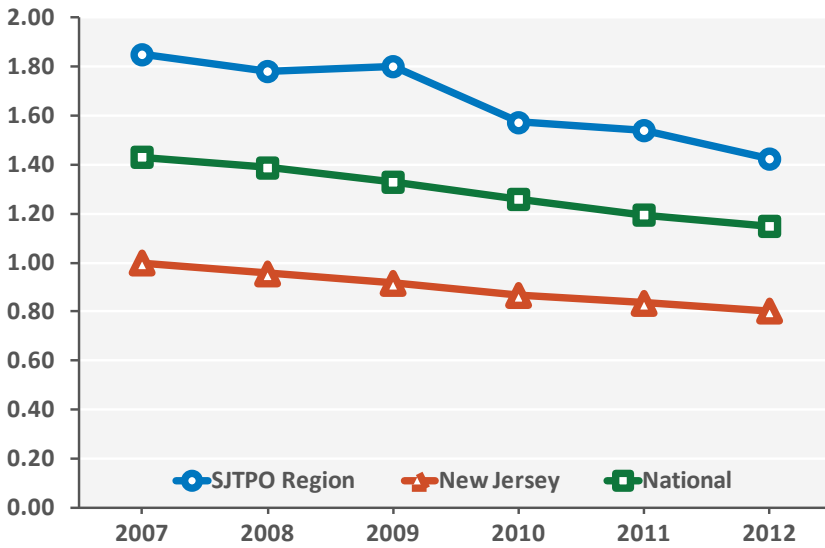


SOURCE: National Highway Traffic Safety Association (NHTSA). Fatality Analysis Reporting System (FARS) at: <http://www.nhtsa.gov/FARS>.

Figure 12 displays the five-year rolling average for Traffic Fatalities per 100 Million VMT for all public roads, including State, County, and Local or Municipal roads. The SJTPO region has a higher traffic fatality rate than the US and New Jersey. As with the number of traffic fatalities above, there is a trend of decreasing traffic fatalities per 100 Million VMT for the region.

¹² VMT data for New Jersey is from the Highway Performance Monitoring System (HPMS), available at: http://www.state.nj.us/transportation/refdata/roadway/pdf/hpms2012/prmvmt_12.pdf. VMT data for the US is from the National Highway Safety Administration website at: (<http://www-nrd.nhtsa.dot.gov/Pubs/812032.pdf>)

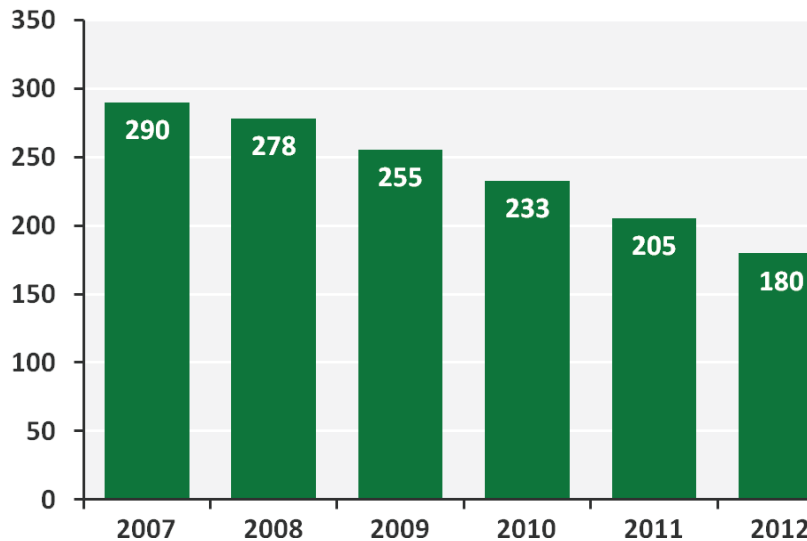
Figure 12: Fatalities per 100 Million Vehicle Miles Traveled (5-Year Rolling Average)



SOURCE: FARS.HPMS.NHTS.

Figure 13 displays the five-year rolling average of serious injuries in the SJTPO region. As with the number of traffic fatalities and traffic fatalities per 100 Million VMT (see above), incapacitating injuries demonstrates a decreasing trend for the years 2007 to 2012.

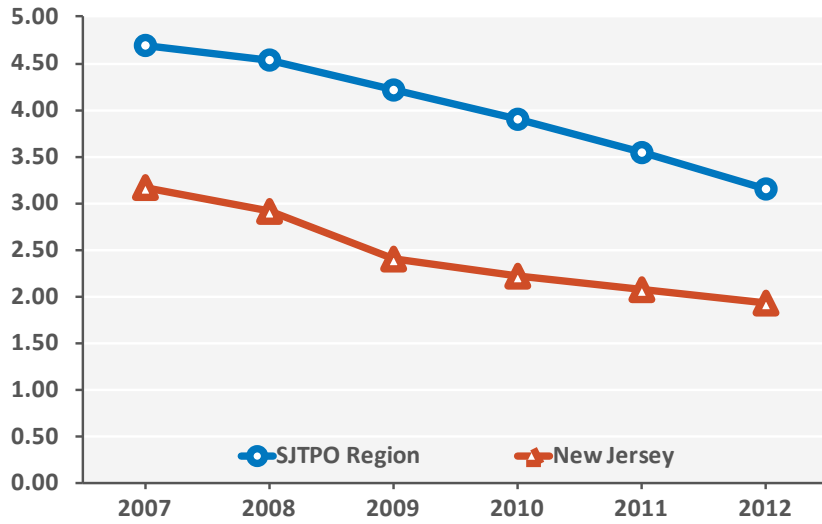
Figure 13: SJTPO Incapacitating Injuries (5-Year Rolling Average)



SOURCE: Rutgers University, Plan4Safety, (NJDOT data)

Figure 14 displays New Jersey’s and SJTPO’s traffic-related incapacitating injuries figures with VMT taken into consideration. The state and the region each have a decreasing trend, with SJTPO rates for the five-year period higher compared to the state.

Figure 14: Incapacitating Injuries per 100 Million Vehicle Miles Traveled (5-Year Rolling Average)



SOURCE: Rutgers University, Plan4Safety, (NJDOT data)

Goal 4:

Improve Emergency Evacuation¹³

Indicator 4.1:

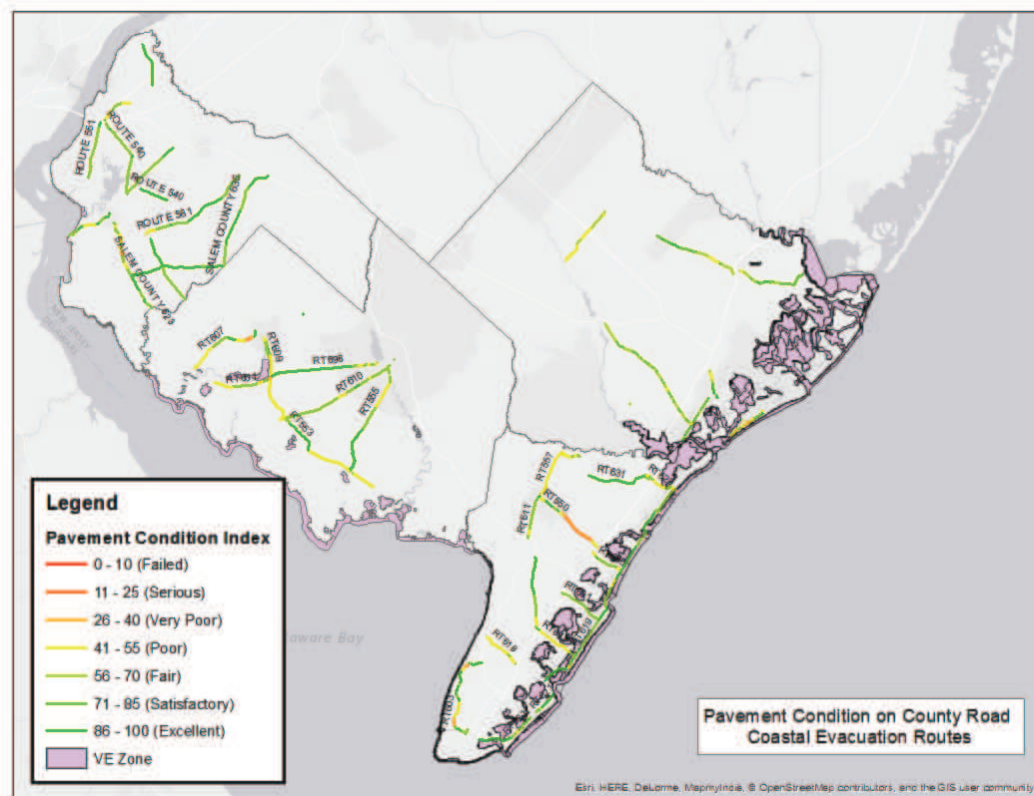
Are SJTPO's evacuation routes in good condition?



Status: They are in “adequate” condition

Based on the Pavement Condition Index (PCI) ratings, most of the evacuation routes in the SJTPO region are in at least “Fair” Condition.

Figure 15: Pavement Condition on Coastal Evacuation Routes on County Roads in Cape May, Cumberland, and Salem Counties



¹³The actual goal in Regional Transportation Plan 2040 is: “Improve Security.”

In this context, security refers to the safety and speed of an evacuation in the event of a natural or man-made incident. To assess security, we looked at county roads designated as “Coastal Evacuation Routes”¹⁴ and extracted the Pavement Condition Index (PCI) rating from the SJTPO Pavement Management System database, performed over the last three years. Pavement condition index (PCI) is a quantitative measure of the condition of a roadway surface. It ranges from 0 to 100, with 0 indicating a roadway in very poor condition and 100 indicating a newly paved surface. PCI is calculated for short roadway segments by examining the segment for a number of pavement distresses including cracking, rutting, and raveling. The extent and severity of each distress is estimated from visual inspection, and a formula is used to compute PCI as a function of the extent and severity of each distress present.

Table 7: Average Evacuation Route PCI of County Roads, Latest Year of Inventory

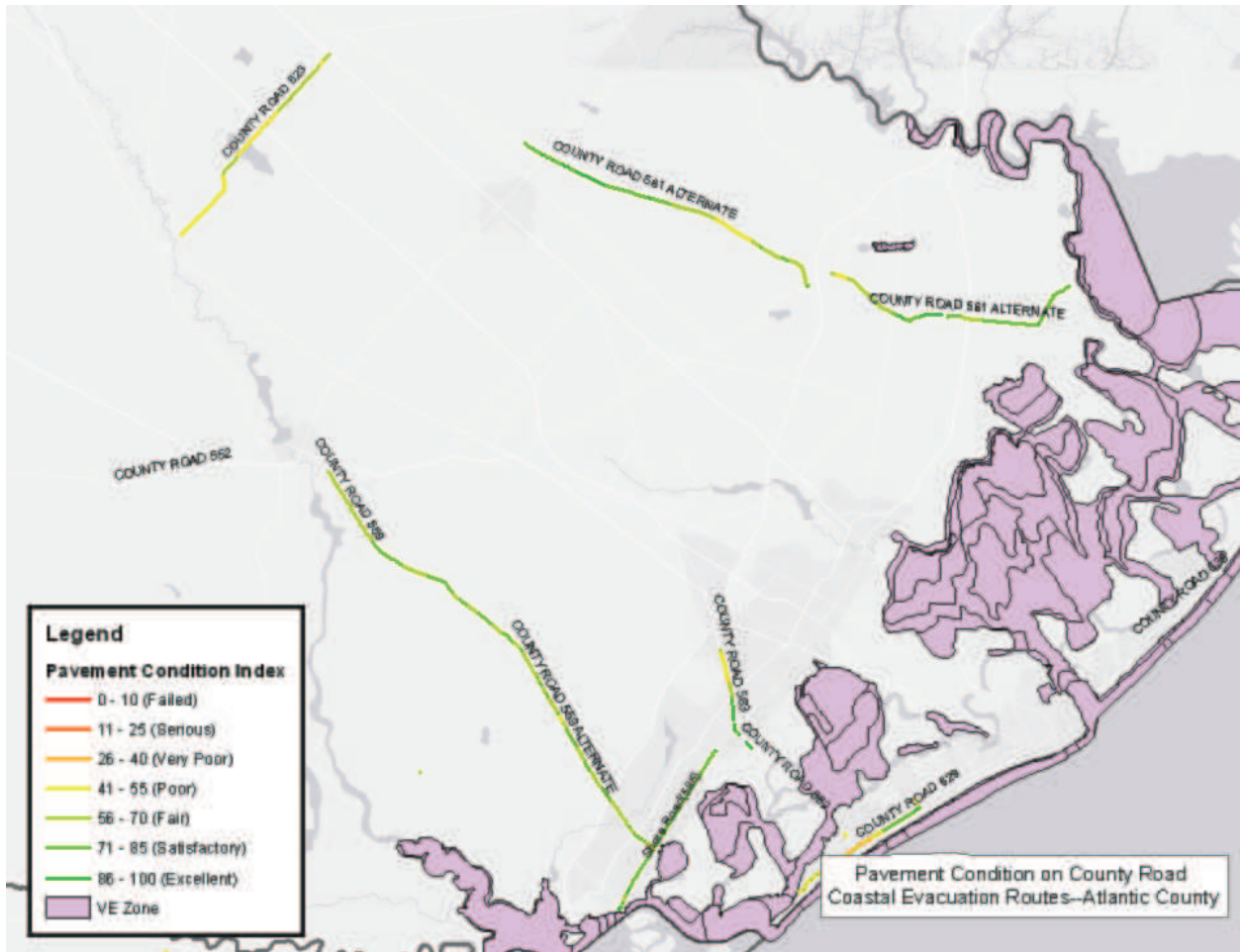
County (Year of Latest Inventory)	PCI	Category
Atlantic (2012)	68.2	Fair
Cape May (2012)	70.3	Satisfactory
Cumberland (2012)	69.6	Fair
Salem (2011)	78.5	Satisfactory

This analysis also included the “VE” Zones, also known as Coastal High Hazard Areas, which are considered to be at high risk of flooding and storm surges.¹⁵ Based on the average PCI’s calculated in Table 7 and the maps, most of the county roads that are designated as “Coastal Evacuation Routes” are in at least “fair” condition. Of course, many State roads, which are under NJDOT’s Pavement Management System, are likely to carry most of the volume (particularly as vehicles come inland from the shore) and are not depicted here.

¹⁴ All roads identified in Figures 15 and Figure 16, respectively, have been identified by the New Jersey Office of Emergency Management as Coastal Evacuation Routes. See Coastal Evacuation Route Maps at: <http://www.state.nj.us/njoem/plan/evacuation-routes.html> for more information.

¹⁵ “Definitions of FEMA Flood Zones.” At: <https://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=10001&langId=-1&content=floodZones&title=FEMA Flood Zone Designations>.

Figure 16: Pavement Conditions on Coastal Evacuation Routes on County Roads in Atlantic County



In addition to these evacuation routes, it should also be noted that every county within the 4-county SJTPO region has their own office of emergency management with their own website, which gives residents instructions on how to prepare for an incident, such as a hurricane, and informs them of the appropriate evacuation zones.

Goal 5:

Mitigate Traffic Congestion

Indicator 5.1:

Are we driving less?



Status: No

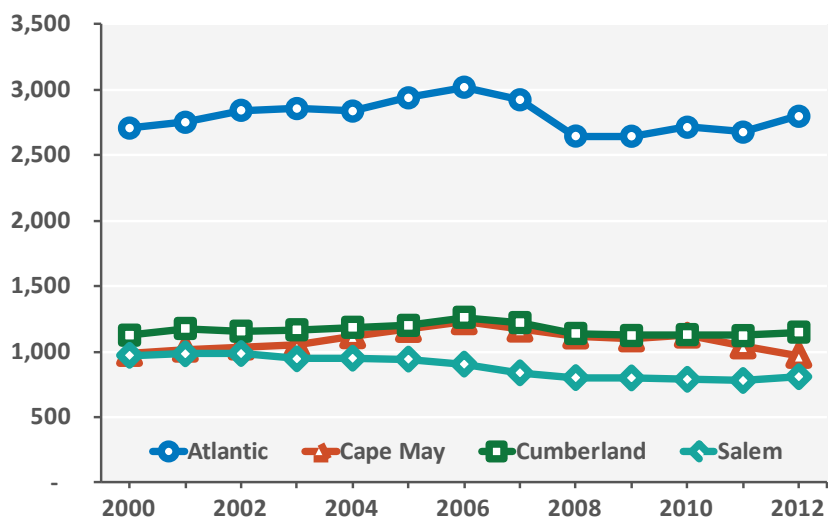
Overall VMT has remained steady during the 5-year period from 2008 to 2012.

In recent years, the amount of travel in the SJTPO region has remained steady. During the five-year period from 2008 to 2012, vehicle travel fluctuated only slightly from the average of 5.7 billion vehicle-miles travelled (VMT) each year. This includes all roads (both State and local/county roads) within the SJTPO region. While vehicle-miles traveled (VMT) is the selected measure and a common indicator for this particular goal, it should be noted that overall VMT is a very general proxy or indicator of congestion. In addition to VMT growth being stagnant, population growth has been slow in recent years – around 1% per year for each of the SJTPO counties.

While most counties saw a slight increase in vehicle travel in this period, Cape May County experienced a 14% decrease. Because much of the travel in the SJTPO region is seasonal, this may indicate fewer shore travelers. The largest growth in travel is seen in Atlantic County, which gained about 150 million vehicle miles of travel in the five-year period.

Prior to 2008, travel was increasing steadily in Atlantic and Cape May counties, reaching its peak in 2006. Travel declined in 2007 and 2008, likely due to the economic downturn and rise in gas prices.

Figure 17: Annual Vehicle-Miles Travelled (in millions) by County, 2000-2012



Source: NJDOT Highway Performance Monitoring System.

As much of the travel in the SJTPO region is seasonal, and the economies of many shore communities are driven by recreational travel, higher VMT is generally considered good for the region. Higher VMT in Atlantic and Cape May counties correspond with more visitors to shore destinations. However, VMT would cause increased traffic congestion on roadway facilities operating near capacity, as well as increased vehicle emissions. At present, regional VMT is expected to remain steady in the coming years.

Indicator 5.2:

Are there fewer vehicle-hours of delay?



Status: New data source; baseline established

There is not enough historical data to determine progress towards this goal. This will serve as baseline data for future comparison.

The SJTPO region is traversed by several major roadways including the Garden State Parkway, Atlantic City Expressway, New Jersey Turnpike, and I-295. In addition, many state and county routes serve important economic centers, including the shore. Congestion on these roadways may be measured using speed and travel time data obtained from the Vehicle Probe Project (VPP), an extensive archive of operations data collected from vehicles travelling along the I-95 Corridor. Managed and maintained by the I-95 Corridor Coalition in partnership with the University of Maryland, the Vehicle Probe Project collects data from connected devices in vehicles on many major roadways in the region. Most of these are state roadways, but also include county roadways. Roadways are divided into short segments, and for each segment, the average speed of vehicles on the segment is recorded in five-minute intervals.

Coverage from the VPP extends back several years on Authority roads, but coverage was only recently obtained on most state and county roadways, and one full year of data on these roadways is not yet available. While more detailed time series data may be available for individual roadways, as this report is meant to measure the system as a whole, as opposed to individual roadways, the VPP was deemed to be the most appropriate data source. The speed and travel time data may serve as a baseline for comparison for future years as more data is recorded by the VPP.

Table 8 lists the VPP estimates of total hours of vehicle delay on each roadway in 2013. Only the extent of the roadways in the SJTPO region is considered; estimates of roadway miles in each direction are listed.

Table 8: Vehicle-hours of Delay on Limited Access Roadways in the SJTPO Region, 2013¹

Roadway	County	Roadway miles	Estimated total vehicle-hours of delay in 2013
Garden State Parkway	Atlantic and Cape May	49.5	111,441
Atlantic City Expressway	Atlantic	27.5	64,851
New Jersey Turnpike	Salem	9.5	40,344
I-295	Salem	9.5	13,146
NJ-55	Cumberland	18.5	5,339
Additional roadways	All	—	Data available beginning July 2013; will be tracked in the future

¹Data from Vehicle Probe Project Suite. Delay is defined as additional travel time needed when travelling 10 mph or more under the free-flow speed.

Another tool provided by the Vehicle Probe Project Suite is the Bottleneck Ranking tool, used to identify bottlenecked conditions. The tool scans through speed data and identifies locations and time periods where the average speed drops below 60% of the free-flow speed for more than five minutes. The duration of the bottleneck is recorded, along with the estimated length of the queue formed by the bottleneck.

Congestion in the SJTPO region is largely seasonal, with many roadways experiencing congestion on summer weekends. The Bottleneck Ranking tool was applied to all roadways in the region for the summer of 2013, from July 1st (the date for which expanded coverage began) through September 2nd (Labor Day Monday). The results were screened to remove bottlenecks with queues mostly outside the region (such as certain NJ Turnpike queues) and to remove erroneous outlier data. Bottlenecked roadways were then ranked based on the Bottleneck Impact Factor. Impact factor is computed as the product of the average bottleneck duration (in minutes), average queue length (in miles), and number of bottleneck occurrences.

Figure 18: Top 10 Bottlenecked Roads in the SJTPO Region, July 1st through September 2nd, 2013

Rank	Roadway	County	Total Impact Factor
1	Garden State Pkwy	Atlantic and Cape May	101,850
2	NJ-47/347	Cumberland and Cape May	84,870
3	Atlantic City Expy	Atlantic	52,108
4	US-40/322	Atlantic	23,701
5	US-9	Atlantic and Cape May	19,610
6	New Jersey Tpke	Salem	14,554
7	Wrangleboro Rd (CR-575)	Atlantic	9,427
8	NJ-109	Cape May	9,257
9	Fire Rd	Atlantic	8,134
10	US-40	Salem	7,651

SOURCE: VPP

Bottlenecks typically occur at locations where there is a reduction in roadway capacity or at interchanges where additional traffic enters the roadway. On the Garden State Parkway, bottlenecks were reported by the Vehicle Probe Project at the traffic signals in Cape May, the toll barrier in Atlantic County, and at the interchange with the Atlantic City Expressway. Many of these bottlenecks are currently being addressed through roadway improvements; for example, the traffic signals in Cape May are being removed and replaced with interchanges, and the Parkway is to be widened in Atlantic County.

On NJ-47, bottlenecking occurs at the locations where the roadway splits into 47 and 347 (in southern Cumberland County), and at the location where the roadways merge back together (in Cape May County).

On the Atlantic City Expressway, bottlenecking was observed by the Vehicle Probe Project near the construction that occurred in the summer of 2013 between the interchange with NJ-54/US-206 and the interchange with NJ-50.

On seasonal roadways such as the Garden State Parkway, NJ-47, and the Atlantic City Expressway, bottlenecking is most commonly observed in the southbound and eastbound directions (toward the shore) on Friday afternoons and Saturdays and in the northbound and westbound directions (away from the shore) on Sundays.

The above data from the summer of 2013 may serve as a baseline for comparison to future data, to see if bottlenecks are mitigated by roadway improvements.

Goal 6:

Protect and Enhance the Environment

Indicator 6.1:

Has air quality improved?



Status: Yes

The design values for the two monitors located in the SJTPO region show that the region has experienced just one violation of the 2008 8-hour ozone standard (at the Brigantine monitor in 2012). As such, while the state as a whole is exceeding the 2008 8-hour ozone standards, the SJTPO region is showing a positive trend.

New Jersey Department of Environmental Protection (NJDEP) monitors ambient air quality levels throughout the state with specialized air quality monitors. There are two monitoring sites located within the SJTPO region; in Brigantine, Atlantic County and Millville, Cumberland County. Currently, the SJTPO is in nonattainment for Ozone, which is one of six criteria air pollutants identified by the EPA. These pollutants can injure health, harm the environment, and cause property damage. The EPA calls these pollutants criteria air pollutants because the agency has developed health-based criteria (science-based guidelines) as the basis for setting permissible levels in the air we breathe. The EPA establishes National Ambient Air Quality Standards (NAAQS), which apply to the concentration of a pollutant in the outdoor air, for each of the criteria pollutants. If the air quality in a geographic area does not meet the national standard, it is called a nonattainment area.¹⁶

Ground-level ozone is created when nitrogen oxides (NOx) and volatile organic compounds (VOC's) react in the presence of sunlight. NOx is primarily emitted by motor vehicles, power plants, and other sources of combustion, while VOC's are emitted from sources such as motor vehicles, chemical plants, factories, consumer and commercial products, and even trees.¹⁷ The current 8-hour ozone standard, promulgated in 2008, is 0.075 parts per million (ppm), or 75 parts per billion (ppb). The original 8-hour ozone standard, promulgated in 1997, was 0.08 ppm, or 80 ppb, but was revoked in 2012.

The best way to determine if an area is meeting the NAAQS is to measure the design value of an area. For a concentration-based standard such as ozone, the air quality design value for a site is defined as the standard-related test statistic that is used to determine whether an area is meeting the standard. The

¹⁶ <http://www.epa.gov/pmdesignations/faq.htm#4>. Accessed 9/9/14.

¹⁷ NJDEP. 2012 Ozone Summary. At: www.njaginow.net.

design value is the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration at each monitor. The highest design value at a particular site is taken as the overall “design value” for the region. The overall design value for the region is depicted in Figure 19. For example, for 2009, the design value of 83 is the maximum of the three-year averages of the fourth-highest maximum 8-hour ozone concentrations from 2007 to 2009. Similarly, for 2010, the design value of 81 is the maximum of the three-year averages of the fourth-highest maximum 8-hour ozone concentrations taken from 2008 to 2010. The design values in each subsequent year are averaged over that year as well as the two preceding years.

As can be seen by Figure 19 the overall design value for New Jersey has exceeded both the current 2008 8-hour ozone standard (75 ppb) for all 5 years, from 2009 to 2013. Table 9 contains the actual design values for the State of New Jersey, from 2009 to 2013. However, the design values for the two monitors located in the SJTPO region show that the region has experienced just one violation of the 2008 8-hour ozone standard (at the Brigantine monitor in 2012). As such, while the state as a whole is exceeding the 2008 8-hour ozone standards, the SJTPO region is showing a positive trend.

Figure 19: 8-Hour Ozone Design Values (Preliminary), 2009-2013, State of New Jersey

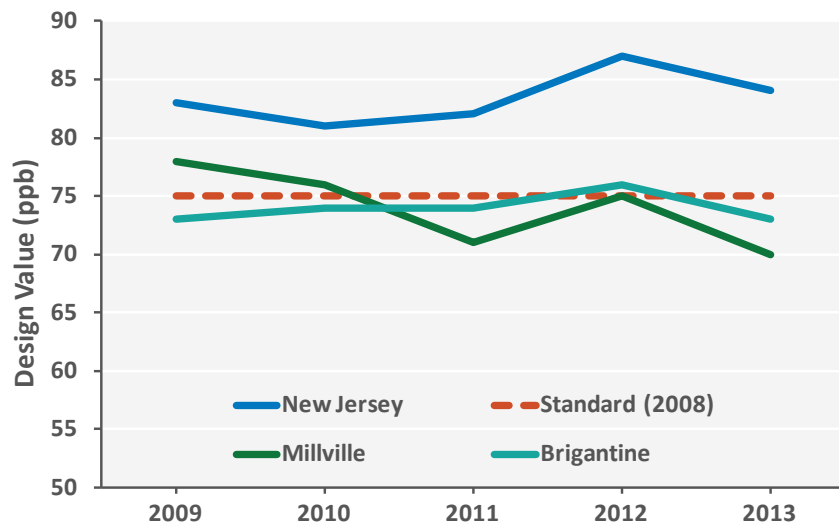


Table 9: 8-Hour Ozone Design Values (Preliminary), 2009-2013, State of New Jersey

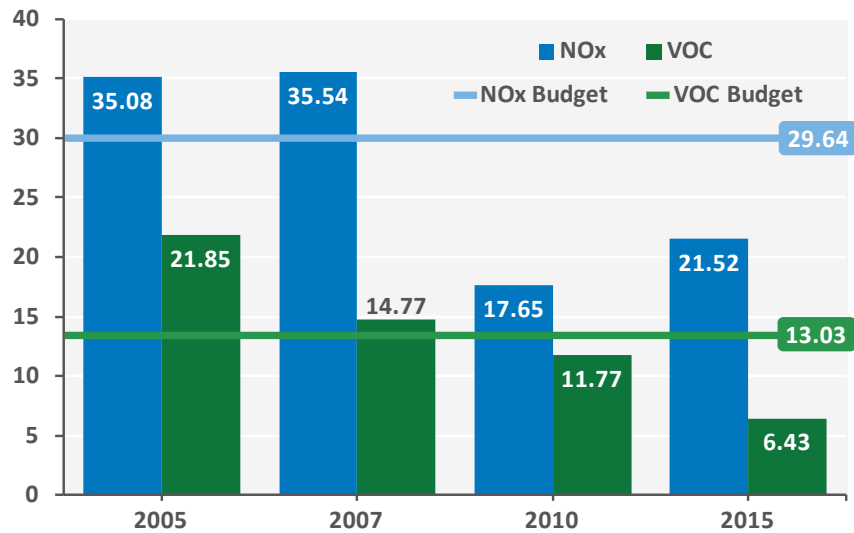
Year	2009	2010	2011	2012	2013
3-Year Span	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Design Value (ppb)	83	81	82	87	84

SOURCE: NJ DEP, 6/2014.

Figure 20 depicts the historic and current trend of mobile source emissions in the SJTPO region since 2005. Since the SJTPO region lies within the 8-hour ozone nonattainment area, it is required to show that its future plans and projects conform to NAAQS, by modeling expected mobile source generated VOC and NOx emissions (the two ozone precursors), and ensuring they fall at or below the mobile

source emissions budgets, depicted in Figure 20 via the dashed lines. While air quality conformity is primarily oriented towards modeling the impact of the future transportation system on air quality emission levels, baseline data, (which precede the forecast years and in most cases are based on a past year), are frequently run as part of the modeling process. As such, Figure 20 depicts the baseline years from a series of past conformity runs. Figure 20 shows a gradual decrease in VOC from 2005 to 2015. NOx has decreased significantly from 2005 to 2010, but has started to increase from 2010 to 2015 although it is still substantially below the emissions budget of 29.64 tpd. Nevertheless, even though past regional emissions analyses are showing increases in NOx levels; as a whole, as can be seen by Figure 19, ambient concentration of 8-hour ozone levels are decreasing, leading to the overall positive rating in air quality.

Figure 20: VOC and NOx Mobile Source Emissions in tons per day (tpd), SJTPO Region, 2005-2015*



*2015 is projected

SOURCE: SJTPO. FY 2006, 2013, and 2014 Air Quality Conformity Runs. Selected conformity analysis years based on conformity regulation rule-§93.106 and vetted by Interagency Consultation Group. Not every year is an analysis year.

Indicator 6.2:

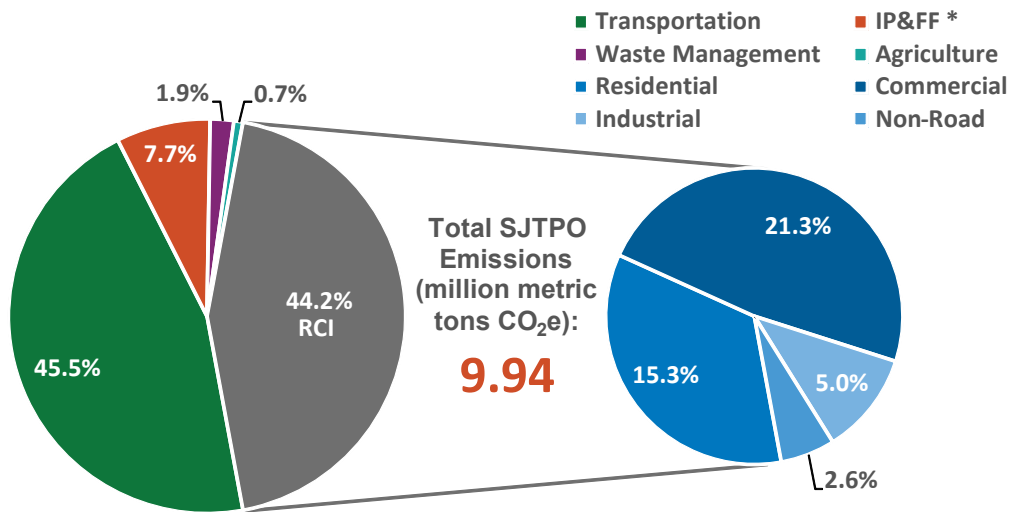
What is the region's carbon footprint?



Status: Not Enough Information

In 2010, the SJTPO region's carbon footprint was 9.94 million metric tons of CO₂-equivalents. Its emissions per capita were 13.84 metric tons of CO₂-equivalents. As this is the first year this type of data has been collected, this will serve as baseline data for future comparison.

Figure 21: SJTPO Gross Greenhouse Gas (GHG) Emissions by Sector, 2010



*Industrial Process and Fossil Fuel

SOURCE: SJTPO Region Greenhouse Gas Emissions Inventory—Final Report. June 2014.

In 2014, SJTPO completed a Regional Greenhouse Gas (GHG) Emissions Inventory, which will serve as a basis for formulating and evaluating GHG reduction policies and action plans at the regional, county, and municipal levels. This region-wide GHG inventory will serve as the first part of larger, long-range climate initiative at the SJTPO, which will include a forecast of the inventory and may include regional mitigation and adaptation plans, as well as creation of a framework for incorporating climate impacts into the evaluation criteria for program and project selection and prioritization.

Table 10: SJTPO Gross Emissions by Sector, 2010

Greenhouse Gas Emissions By Source (2010)	In million metric tons CO₂e
Residential	1.52
Commercial	2.11
Industrial	0.49
Non-Road	0.26
Transportation	4.52
Industrial Processes and Fossil Fuel (IP&FF)	0.76
Agriculture	0.07
Waste Management	0.19
Land Use, Land Use Change and Forestry (LULUCF)*	0.002
Total	9.94

*Includes Non-road Engines used for forestry, and non-agricultural fertilizer application, often referred to as “settlement soils”
SOURCE: SJTPO Region Greenhouse Gas Emissions Inventory, Final Summary Report, AKRF, June 2014.

As seen in Figure 21 and Table 10, above, the transportation sector accounts for 45% of carbon dioxide equivalent (CO₂e) emissions.¹⁸ In addition to on-road vehicles that comprise the greatest proportion of transportation emissions, other vehicles include non-road recreation vehicles, aviation, passenger, and freight rail, and commercial and recreational marine vessels. This finding would suggest that mitigation measures aimed at transportation activity, such as implementing more travel demand management programs, such as telecommuting or compressed work weeks, incentivizing the use of alternate fuel vehicles (AFV’s), including hybrids or electric vehicles, and altering mode shift to increase transit ridership, would be most effective in decreasing the regional carbon footprint.

The other sectors included in this inventory were:

- Residential, Commercial, and Industrial Fuel Use and Electricity Consumption;
- Industrial Processes and Fossil Fuel, which includes industrial processes such as glass manufacturing, soda ash production and use, and cooling and refrigeration;
- Agriculture, which includes crop production, agricultural non-road engines, and livestock management activities;
- Waste Management, which includes both solid waste and wastewater management; and
- Land Use, Land Use Change, and Forestry, which includes the net CO₂ flux from both forested lands and urban forests.

As a metropolitan planning organization, SJTPO has limited influence over these other sectors, but in its role as a coordinating agency can bring agencies and jurisdictions together. Due to its close relationship

¹⁸ CO₂e: This is a sum that includes the quantity of each greenhouse gas weighted by a factor of its effectiveness as a GHG, using CO₂ as a reference. While CO₂ is the most abundant GHG, it is not the only one. Other GHGs include methane (CH₄), nitrous oxides (N₂O), and sulfur hexafluoride (SF₆).

transportation being the largest greenhouse gas emitting sector in the region, and on a relative basis, accounts for a higher proportion of emissions within the region than the State as a whole. As such, this too could explain the SJTPO’s region’s overall higher emissions per capita.

Table 11: Emissions per Capita, 2010²

Jurisdiction	Emissions per capita (mtCO2e)
SJTPO Region	13.84
DVRPC³	14.40
New Jersey⁴	12.87
USA⁵	21.93

² Inventory assuming direct-based emissions without energy-cycle emissions plus consumption-based electricity emissions

³ Provided by DVRPC via email, 7/22/14.

⁴ Source: NJDEP. Statewide Greenhouse Gas Emission Inventory for 2009. November 2012.

⁵ Source: Inventory of U.S. GHG Emissions and Sinks, 1990-2012. April 15, 2014.

As this is the first time a detailed inventory such as this has been done for the SJTPO region, this data will serve as a baseline for future comparison. However, the state as a whole has reduced its CO₂ emissions by 8.5 percent between 2000 and 2011. During this same period, the entire nation saw an 8.3 percent drop in emissions²⁰; both of these are positive trends.

²⁰Source: US Energy Information Administration. (EIA). At: http://www.eia.gov/environment/emissions/state/state_emissions.cfm.

Goal 7:

Enhance the Integration and Connectivity of the Transportation System

Indicator 7.1:

Has accessibility to transit stations/bus stops improved?



Status: Not Enough Information

The information compiled will serve as a baseline for future comparison.

In addition to being one of the main goals espoused in the SJTPO 2040 Regional Transportation Plan, intermodal connectivity is an important attribute of any transportation system and has a great influence on how people utilize the system.

One area in which the SJTPO region has made inroads is the ability to link a bicycle portion of a trip to a transit bus. Although only about 40% of the bus lines in the SJTPO region are served by buses equipped with bike racks, the lines without bus racks have luggage compartments under the bus that will accommodate a bike. As part of the Subregional Transportation Program, Atlantic County recently conducted an inventory of the bus stops and shelters within the county. The inventory consisted of heavily traveled local commuter routes, and included stops on both county roads and state highways. Out of the 92 bus stops surveyed, 84 (91.4%) had a sidewalk connected to it.²¹ This would suggest good connectivity in Atlantic County, where the majority of the bus stops in the region are located.

²¹ Atlantic County Department of Regional Planning and Economic Development. *Atlantic County Project of the Assessment of Bus Stop/Shelter Accessibility and Safety*. July 2013.

Goal 8:

Restore, Preserve and Maintain the Existing Transportation System

Indicator 8.1:

What is the pavement condition of our roads?



Status: Not Enough Information

While the most recent Asset Management System (AMS) inventory shows that almost 46% of the total roadway mileage within the region has a Pavement Condition Index (PCI) of either “Satisfactory” or “Excellent,” this is based on just one year’s worth of data for all but Vineland and Atlantic County and as such, progress towards a goal cannot be determined. The information compiled will serve as a baseline for future comparison.

The pavement constituting the region’s roads comprises a large portion of the region’s transportation infrastructure. SJTPO’s Asset Management System (AMS) includes a pavement inventory on county roads within the four-county SJTPO region, as well as municipal roads in the City of Vineland. Each pavement section has a Pavement Condition Index (PCI), which is based on the condition of the road. Using PCI, we can determine the number of road-miles that are in good condition (See Goal 4, above, for a more complete explanation of PCI). Out of the 1,749 miles of roadway in SJTPO’s Asset Management System, the average PCI for the region is 69.67, which is considered “good.”

Figures 23 and 24 show the distribution of road pavement miles within the AMS across each category in the form of a pie and bar chart, respectively. Using the most recent inventory done for each county, out of the 1,749 total miles, 806 (46%) of the total AMS roadway mileage falls within the two highest categories (Satisfactory and Excellent) while 943 (54%) of the total roadway miles falls within the lowest five categories (Failed, Serious, Very Poor, Poor, and Fair).

Figure 23: Road Miles by Condition Status (Percentage)

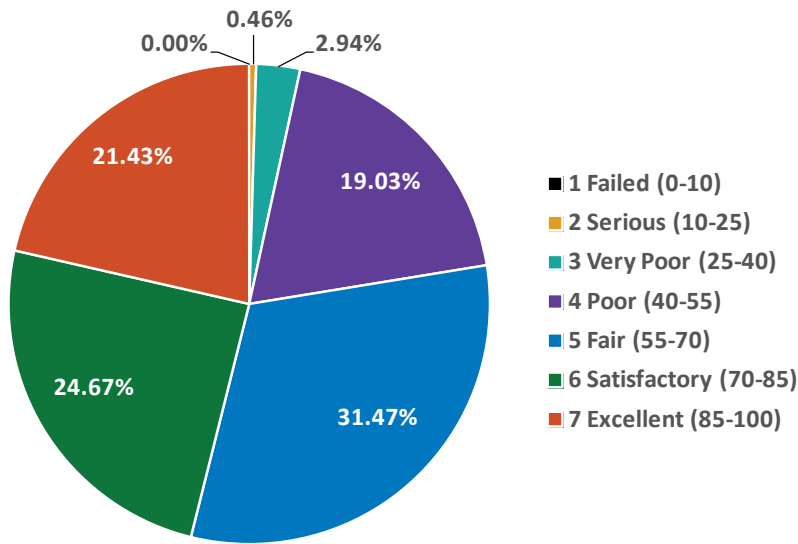
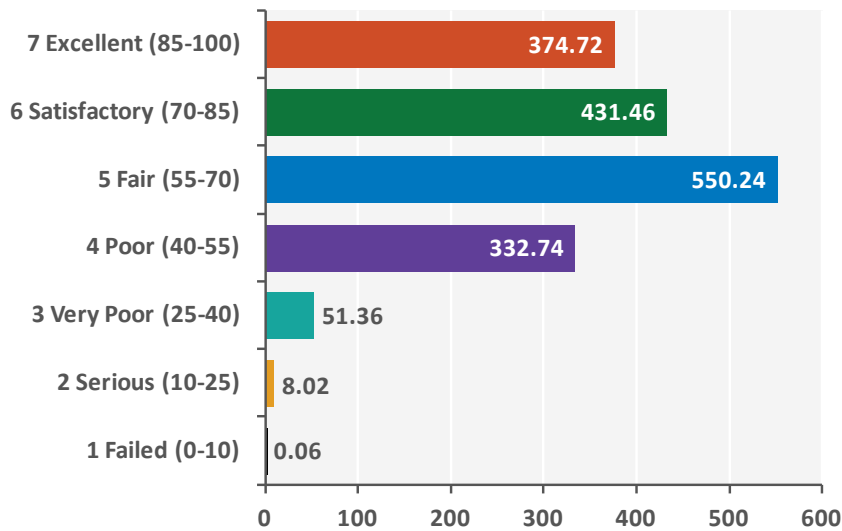


Figure 24: Road Miles by Condition Status (Miles)



SOURCES (Fig. 23 and 24): SJTPO AMS. Atlantic, Cape May, Cumberland Counties, 2012. Salem County, 2011. Vineland City, 2013.

The trend information is limited. Only Vineland and Atlantic County have more than one inventory.

Appendix 5: Transportation System Assessment of the SJTPO Regional Transportation Plan 2040 contains a review of State-maintained pavements in the SJTPO region. As seen in Figure 11, the data indicate a worsening trend in the State-maintained pavement, with an increasing percentage of lane-miles rated “deficient” and a decreasing percentage rated “fair.”²²

²² SJTPO Regional Transportation Plan 2040. At: http://www.sjtpo.org/Documents/RTP/2040/RTP2040_Appendix4-System.pdf.

Indicator 8.2:

What is the average sufficiency rating of our bridges?



Status: Improving slightly

The average Sufficiency Rating for bridges in the SJTPO region in 2014 is 82.33 (Satisfactory). The rating has increased slightly but steadily since 2008. The number of “Structurally Deficient” Bridges in the region has also decreased slightly by 28%.

Bridge Management System (BMS)

In addition to road pavement, bridges also constitute a significant portion of the regional transportation infrastructure. Condition ratings for bridges in the SJTPO region are performed by NJDOT. Although the BMS is a statewide system, it includes all bridges at least 20 feet in length, regardless of ownership. This allows for comparable reporting at the national level.

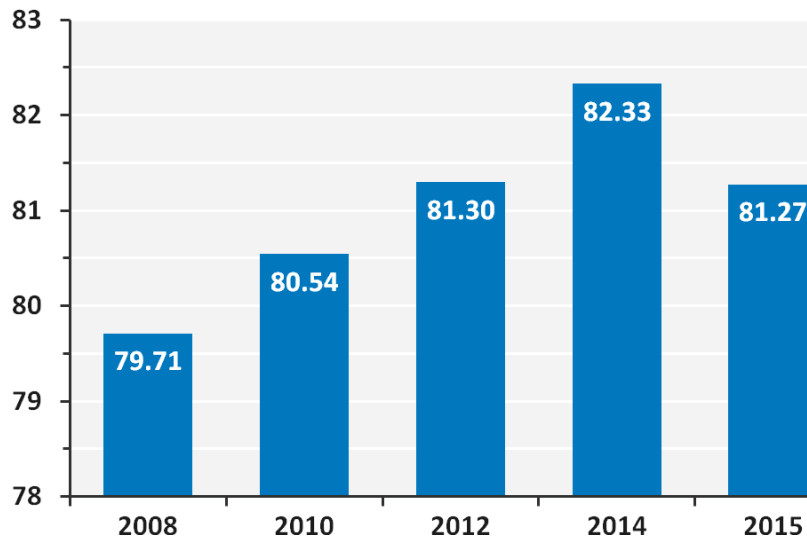
A Sufficiency Rating is generated for each bridge to summarize its structural condition. According to the “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (Coding Guide)”:

The sufficiency rating formula described herein is a method of evaluating highway bridge data by calculating four separate factors to obtain a numeric value, which is indicative of bridge sufficiency to remain in service. The result of this method is a percentage in which 100 percent would represent a sufficient bridge and zero percent would represent an insufficient or deficient bridge.

As can be seen from Figure 25, the average Sufficiency Rating for bridges in the SJTPO region is 81.27 (Satisfactory). The rating for the region has increased slightly but steadily since 2008. By way of comparison, the average Sufficiency Rating for the State of New Jersey is 73.7.²³

²³At: <http://www.fhwa.dot.gov/bridge/nbi/disclaim.cfm?nbiYear=2013&nbiState=NJ13>.

Figure 25: SJTPO Bridges Average Sufficiency Rating, 2008-2012



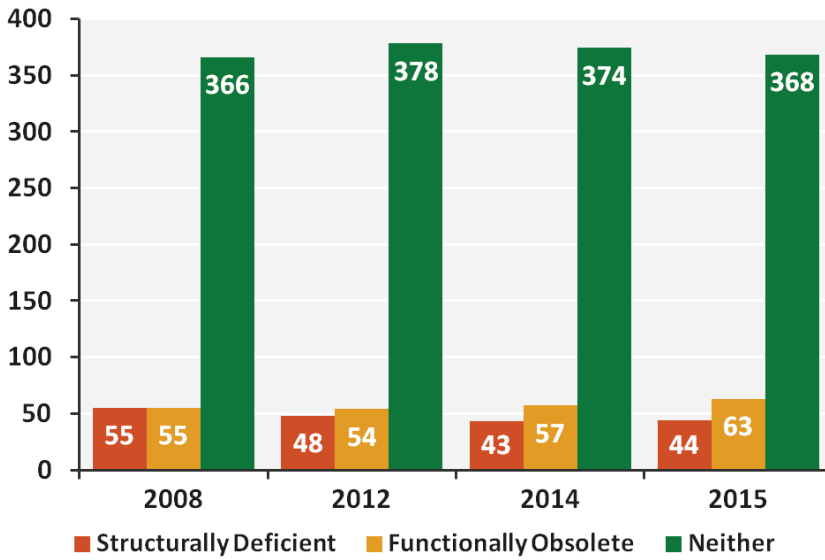
SOURCE: NJDOT Bridge Management System. 2015.

Structural Adequacy and Functional Obsolescence are two factors that go into a Bridge’s Sufficiency Rating. Certain portions of the bridge inspection system are used to determine these commonly cited measures. Figure 26 displays data from three different reporting years: 2008, 2012, and 2014. The chart contains the number of bridges that are structurally deficient, functionally obsolete, or neither.²⁴

²⁴ A **structurally deficient** bridge, when left open to traffic, typically requires significant maintenance and repair to remain in service and eventual rehabilitation or replacement to address deficiencies. **The fact that a bridge is classified under the federal definition as “structurally deficient” does not imply that it is unsafe.** To remain in service, structurally deficient bridges are often posted with weight limits to restrict the gross weight of vehicles using the bridges to less than the maximum weight typically allowed by statute.

A **functionally obsolete** bridge is one that was built to standards that are not used today. These bridges are not automatically rated as structurally deficient, nor are they inherently unsafe. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand, or those that may be occasionally flooded. Both definitions from: <http://www.iowadot.gov/subcommittee/bridgeterms.aspx#f>.

Figure 26: SJTPO Region Bridge Status, 2008, 2012, and 2014



SOURCE: NJDOT Bridge Management System. 2014.

As can be seen in Figure 26, statistics from the NJDOT’s Bridge Management System (BMS) show that in 2014, 43 (9%) of bridges in the SJTPO region are Structurally Deficient, 57 (12%) are Functionally Obsolete, and 374 (79%) are in neither category. The Structurally Deficient category shows a slight decreasing (favorable) trend from 2008, while the Functionally Obsolete category shows a slightly increasing (unfavorable) trend.

Summary and Next Steps

SJTPO's "RTP Performance Report" tells a number of different stories. For some of the goals, such as "Improving Safety" and "Protecting and Enhancing the Environment," it appears that the region has made progress. For other goals, such as "Promoting Transportation Choices" or "Enhancing Connectivity," the dial has not really moved since the 2040 RTP and more work or additional policy intervention may be necessary to "alter" the dial. Still for other goals, such as "Mitigating traffic congestion" or "Improving Evacuation Routes," the results presented here serve more as a baseline with too few data points to determine a specific trend. In any case, these goals and indicators are meant to serve as a foundation for the upcoming 2040 Regional Transportation Plan Update, due out in 2016.

It is possible that in the interim, some of these goals and indicators may change. It is also possible that some of the performance measures used in evaluating the indicators may be replaced by different indicators and measures. Because of the higher-level, 30,000-foot view assumed in this report, many details surrounding each of these measures have been omitted. It is the intent that much of these details will be filled in as part of the more detailed system-level reports that will be a part of the next Plan. At any rate, this report represents a major milestone in fulfilling the "System Monitoring, Evaluation and Reporting" requirements of the Performance-Based Planning Process, and constitutes a significant step in steering SJTPO's planning process towards more of a performance-based process in line with the tenets of MAP-21.

**Appendix 1.(a). SJTPO Bridges
Status Rating of Deficient
Sorted by County Municipality¹**

COUNTY	Municipality	Owner	STRUCTURE NAME	STATUS	SUFFICIENCY RATING
ATLANTIC	Absecon City	County	MILL ROAD (CR 651) OVER ABSECON CREEK	DEFICIENT	32.90
ATLANTIC	Atlantic City city	Municipality	OHIO AVENUE /VENICE LAGOON	DEFICIENT	58.20
ATLANTIC	Atlantic City city	Municipality	OHIO AVENUE OVER PENROSE CANAL	DEFICIENT	30.70
ATLANTIC	Atlantic City city	State Routes	U.S. 30 OVER DUCK THOROFARE	DEFICIENT	34.40
ATLANTIC	Atlantic City city	State Routes	U.S.ROUTE 30 / NEWFOUND THOROFARE	DEFICIENT	35.40
ATLANTIC	Egg Harbor City city	County	CLARKS LANDING RD (CR 624) OVER LANDING CREEK	DEFICIENT	69.90
ATLANTIC	Egg Harbor City city	County	GREEN BANK RD (CR 563) OVER INDIAN CABIN CREEK	DEFICIENT	52.40
ATLANTIC	Egg Harbor City city	County	INDIAN CABIN RD OVER INDIAN CABIN CREEK	DEFICIENT	58.50
ATLANTIC	Egg Harbor Township	County	MAYS LNDG-SOMERS PT/ENGLISH CREEK	DEFICIENT	35.80
ATLANTIC	Egg Harbor Township	County	MAYS LANDING-SOMERS PT RD (CR 559) / LAKES CREEK	DEFICIENT	56.90
ATLANTIC	Egg Harbor Township	County	MAYS LNDG-SOMERS PT RD (CR 559) / PATCONG CREEK	DEFICIENT	9.00
ATLANTIC	Folsom borough	State Routes	NJ 54 OVER CONRAIL AND HOSPITALITY BROOK	DEFICIENT	19.00
ATLANTIC	Folsom borough	State Routes	NJ 54 OVER US 322	DEFICIENT	42.50
ATLANTIC	Folsom borough	State Routes	US 322 OVER CAPE MAY BRANCH	DEFICIENT	49.20
ATLANTIC	Folsom borough	County	EIGHTH ST OVER HOSPITALITY BRANCH	DEFICIENT	36.80
ATLANTIC	Galloway township	NJ Transit	TILTON RD (RT 563) OVER ATLNTIC CITY LINE	DEFICIENT	67.50
ATLANTIC	Hamilton township	State Routes	US 322 OVER GREAT EGG HARBOR RIVER	DEFICIENT	68.20
ATLANTIC	Hamilton township	County	MAYS LNDG-TUCKAHOE RD (CR 559)/GRT EGG HAR.RIV	DEFICIENT	48.60
ATLANTIC	Hammonton town	State Routes	US 206 OVER CLARKS CREEK	DEFICIENT	62.80
ATLANTIC	Hammonton town	State Routes	US 206 OVER SLEEPERS BROOK	DEFICIENT	65.10
ATLANTIC	Hammonton town	NJ Transit	WEYMOUTH RD (CR 640) / ATLANTIC CITY LINE	DEFICIENT	17.60
ATLANTIC	Hammonton town	County	ATSION RD (CR 613) OVER GREAT SWAMP BRANCH	DEFICIENT	34.90
ATLANTIC	Longport borough	County	JOHN F KENNEDY MEMORIAL (CR 629)/RISLEY CHANNEL	DEFICIENT	35.10
ATLANTIC	Port Republic city	County	OLD NEW YORK ROAD (CR 610) / NACOTE CREEK	DEFICIENT	18.40
ATLANTIC	Somers Point city	GSP	GSP NB/GREAT EGG HARBOR &HARBOR RD	DEFICIENT	43.80
CAPE MAY	Avalon borough	Cape May Co. BC	CR 619 OCEAN DRIVE over TOWNSENDS INLET	DEFICIENT	7.00
CAPE MAY	Cape May city	County	CR633(LAFAYETTE ST)/CAPE ISLAND CREE	DEFICIENT	30.00
CAPE MAY	Lower township	County	CR 621 (OCEAN DR)/UPPER THOROFARE	DEFICIENT	29.80
CAPE MAY	Lower township	Cape May Co. BC	CR 621 (OCEAN DRIVE) over MIDDLE THOROFARE	DEFICIENT	7.00
CAPE MAY	Middle township	Cape May Co. BC	CR 619 (OCEAN DRIVE) over GRASSY SOUND	DEFICIENT	7.00
CAPE MAY	Upper township	State Routes	NJ 50 Over Tuckahoe River	DEFICIENT	26.20
CAPE MAY	Upper township	Cape May Co. BC	CR 619 OCEAN DRIVE over CORSON INLET	DEFICIENT	5.00
CUMBERLAND	Millville city	State Routes	N.J.RTE.47 OVER MENANTICO CREEK	DEFICIENT	54.50
CUMBERLAND	Millville city	State Routes	NJ 49 OVER MAURICE RIVER	DEFICIENT	65.60
CUMBERLAND	Millville city	State Routes	NJ ROUTE 55 SB OVER NJ ROUTE 49	DEFICIENT	66.30
CUMBERLAND	Millville city	State Routes	NJ 55 NB OVER NJ 47	DEFICIENT	66.70
CUMBERLAND	Millville city	State Routes	NJ 55 SB OVER NJ 47	DEFICIENT	49.60
CUMBERLAND	Vineland city	State Routes	RT 555 (MAIN ROAD) OVER NJ 55	DEFICIENT	65.60
SALEM	Carneys Point township	State Routes	ROUTE I-295 NB/ NJTPK, RT US 40 and SALEM CANAL	DEFICIENT	67.60
SALEM	Carneys Point township	State Routes	I-295 SB Ramp K to CR551 over I-295 SB	DEFICIENT	50.30

**Appendix 1.(a). SJTPO Bridges
Status Rating of Deficient
Sorted by County Municipality¹**

COUNTY	Municipality	Owner	STRUCTURE NAME	STATUS	SUFFICIENCY RATING
SALEM	Oldmans township	State Routes	PERKINTOWN ROAD(CR 644) OVER I-295	DEFICIENT	82.10
SALEM	Pittsgrove township	County	LOWER MILL RD OVER PALANTINE BR. OF MUDDY RUN	DEFICIENT	62.40
SALEM	Pittsgrove township	County	GERSHEL AVE OVER MUDDY RUN	DEFICIENT	62.20
SALEM	Upper Pittsgrove township	County	FRIENDSHIP-CHURCH RD OVER MUDDY RUN	DEFICIENT	48.60

¹ As of March 15, 2015.

Appendix 1(b). Bridge Status--SJTPO Region

Date: 4/29/2015

Bridge Status	NJ Turnpike
Status	Garden State Pkwy
DEFICIENT	I-295
N/A	AC Expressway
NEITHER	US Highways
OBSOLETE	SJ Roads

