



2016 UPDATE TO THE REGIONAL TRANSPORTATION PLAN

South Jersey
Transportation
Planning Organization

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Appendix D Congestion Management Process Activity Report

FINAL JULY 25, 2016

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1.0 Introduction

This report is constructed in a streamlined fashion so that users can easily locate and retrieve data. We expect the users to consist of the planning and operations departments of our local and state partners and Cross County Connection, which is the Transportation Management Area organization for the SJTPO area.

A detailed description of the SJTPO process is provided in the FY15 SJTPO CMP Methodology Report;¹ that product allows for brevity in this product, the FY16 SJTPO CMP Activity Report.

1.1 Congestion Management Process

1.1.1 Requirement

Federal transportation law requires the use of the Congestion Management Process (CMP) in Transportation Management Areas (TMA). A TMA is a metropolitan area with population exceeding 200,000. Federal requirements also state that in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process.²

Congestion management processes are to have the following elements:

- Development of congestion management objectives,
- Establishment of measures of multimodal transportation system performance,
- Data collection and system performance monitoring that is used to define congestion's extent, duration, and its causes,
- Use of analytic tools to define and identify congestion within a region,
- Identification and assessment of congestion management strategies,
- Select appropriate strategies to reduce congestion or mitigate the impacts of congestion,
- Advancement of congestion management strategies into the funding and implementation stages,
- Evaluation of the effectiveness of implemented strategies & of the CMP itself.

The FY15 SJTPO CMP Methodology Report incorporates all of the above. This document includes all features in the Methodology Report that were deemed relevant or reasonable.

1 Available at www.sjtpo.org/Documents/CMP/FY13-16_CMPMethodologyReport.pdf

2 [FHWA. Congestion Management Guidebook. 2011.](#)

1.1.2 Background

Since 1991, congestion management systems have been used and improved upon. Knowledge has increased, data has become more available, tools have been enhanced, and intelligent transportation systems have expanded.

The CMP itself has also evolved; current practices link management, operations, and planning. The CMP includes steps that utilize travel demand reduction and operational management strategies to keep environmental impact to a minimum.

1.1.3 CMP Description

The CMP is to be a regionally-accepted, systematic process that integrates management and operations for managing congestion for a multimodal transportation system. In addition, the CMP is to provide accurate and up-to-date information on transportation system performance.

1.2 SJTPO's CMP Approach:

SJTPO follows the data-driven eight step CMP approach as prescribed by the FHWA. To accomplish this SJTPO relies on quantitative and qualitative data and information. Qualitative data and information is contributed from our partner agencies with their many experienced observers that are on the ground. As such, data collection and analysis is an important of our process.

The SJTPO team also follows the FHWA guidelines for prioritizing general congestion management strategies. That is, we apply these general strategy categories in this order of preference:

- **Reduce Demand** – for motorized vehicular capacity on the congested corridors
- **Shift Mode of Trip** – from single-occupant vehicles to more capacity-efficient modes
- **Improve Operations** – specifically the operational aspects of congested corridors
- **Increase Capacity** – of the congested corridors to accommodate additional traffic

With careful attention to the FHWA guidelines, SJTPO developed and performed its Congestion Management Process.

1.3 This CMP Report: CMP Deployment – CMP Activity

The FY15 SJTPO CMP Methodology Report documents the congestion management process. This report documents SJTPO's CMP deployment or CMP activity. We have organized this report based on the eight step process, as prescribed in the FHWA Performance Management Guidebook.³ The first three steps were performed as a result of developing the methodology. The FY15 SJTPO CMP Methodology Report documents in more detail, the following steps:

³ Available at www.fhwa.dot.gov/planning/congestion_management_process/cmp_guidebook/chap00.cfm.

- **Step 1** Establishing Regional Objectives
- **Step 2** Defining the CMP Network
- **Step 3** Developing Multi-modal Performance Measures

This CMP Activity Report contains sections that relate to CMP Steps 4 through 8:

- **Step 4** Collect Data/Monitor System Performances (Section 2 & 3)
- **Step 5** Analyze Congestion Problems and Needs (Section 3)
- **Step 6** Identify and Assess Strategies (Section 4)
- **Step 7** Program and Implement Strategies (Section 5)
- **Step 8** Evaluate Strategy Effectiveness (Section 6)

We consider CMP Steps 4 through 8 as CMP deployment or CMP activities. They are documented in this report in Sections 2 through 5 below. Section 2 includes the congested locations that were identified as a result of our data collection and analysis. The locations of interest are ranked for the state and the local roads.

State road congestion issues are conveyed to NJDOT. SJTPO participates in the state congestion management process. Our organization acts as a conduit between our planning partners and NJDOT in this respect.

Section 3 displays the results of our network congestion performance evaluation. This information may be used to improve the network's overall congestion management performance.

The locations of interest for the local roads on the federal aid system flow into the SJTPO project development pipeline (Sections 4 and 5). The SJTPO engineering staff, our partner agencies, and consultants participate in the various stages of the project development pipeline.

2.0 Identifying Congested Locations

The congested locations are identified as Locations of Interest. There are two lists depicting Locations of Interest displayed below, one for state roads (Figure 1(a)), and one for local roads, (Figure 1(b)). Figure 2, which follows, depicts the bottleneck locations on County and Local Roads. The state list will be presented to NJDOT; the local list is presented to the SJTPO Engineering Team for consideration for possible future action. The locations are ranked in order of the Impact Factor as calculated within the VPP. See the SJTPO Methodology Report (at www.sitpo.org/Documents/CMP/FY13-16_CMPMethodologyReport.pdf) for more information on the Impact Factor.

Figure 1: Locations of Interest

(a). State Roads

Rank	Location	Direction	Ave Duration	Ave Max Length Miles	Occurrences	Impact Factor
1	GARDEN STATE PKWY N @ ATLANTIC CITY EXPY/EXIT 38	NORTHBOUND	2 h 17 m	5.48	94	70,606
2	NJ-47 N @ CR-670/E CREEK MILL RD	NORTHBOUND	1 h 36 m	4.75	95	43,327
3	NEW JERSEY TPKE S @ DEEP WATER SLAPES CORNER RD	SOUTHBOUND	2 h 49 m	3.24	66	36,131
4	US-322 E @ CR-575/ENGLISH CREEK AVE	EASTBOUND	38 m	1.96	437	32,553
5	CR-575 S @ US-40/US-322/BLACK HORSE PIKE	SOUTHBOUND	35 m	2.00	434	30,434 a
6	NJ-52 S @ CENTRAL AVE	SOUTHBOUND	48 m	0.92	565	25,085
7	US-9 N @ GARDEN STATE PKWY (SOMERS POINT)	NORTHBOUND	1 h 33 m	3.28	82	25,040 b
8	NJ-47 S @ NJ-83	SOUTHBOUND	50 m	2.13	231	24,627
9	ATLANTIC CITY EXPY E @ GARDEN STATE PKWY/EXIT 38A	EASTBOUND	1 h 36 m	2.65	95	24,208
10	US-322 W @ CR-575/WRANGLEBORO RD	WESTBOUND	39 m	1.76	415	23,002

(b). Local Roads

Rank	Location	Direction	Ave Duration	Ave Max Length Miles	Occurrences	Impact Factor
1	ATLANTIC AVE W @ N ARKANSAS AVE	WESTBOUND	39 m	1.13	464	20,457
2	N MISSOURI AVE S @ ATLANTIC AVE	SOUTHBOUND	33 m	0.34	776	8,834
3	FIRE RD N @ DELILAH RD	NORTHBOUND	50 m	0.35	492	8,655
4	FIRE RD S @ TILTON RD	SOUTHBOUND	36 m	0.30	713	7,729
5	MAIN RD N @ E LANDIS AVE	NORTHBOUND	23 m	2.86	115	7,562
6	FIRE RD S @ MILL RD	SOUTHBOUND	38 m	0.48	375	6,863
7	FIRE RD N @ TILTON RD	NORTHBOUND	42 m	0.21	593	5,348

Figure 2 Notes:

a: The name of this location includes a local road because the bottleneck backs-up into the local road.

b: The actual queue likely backs-up into GAP/US-9 bridge.

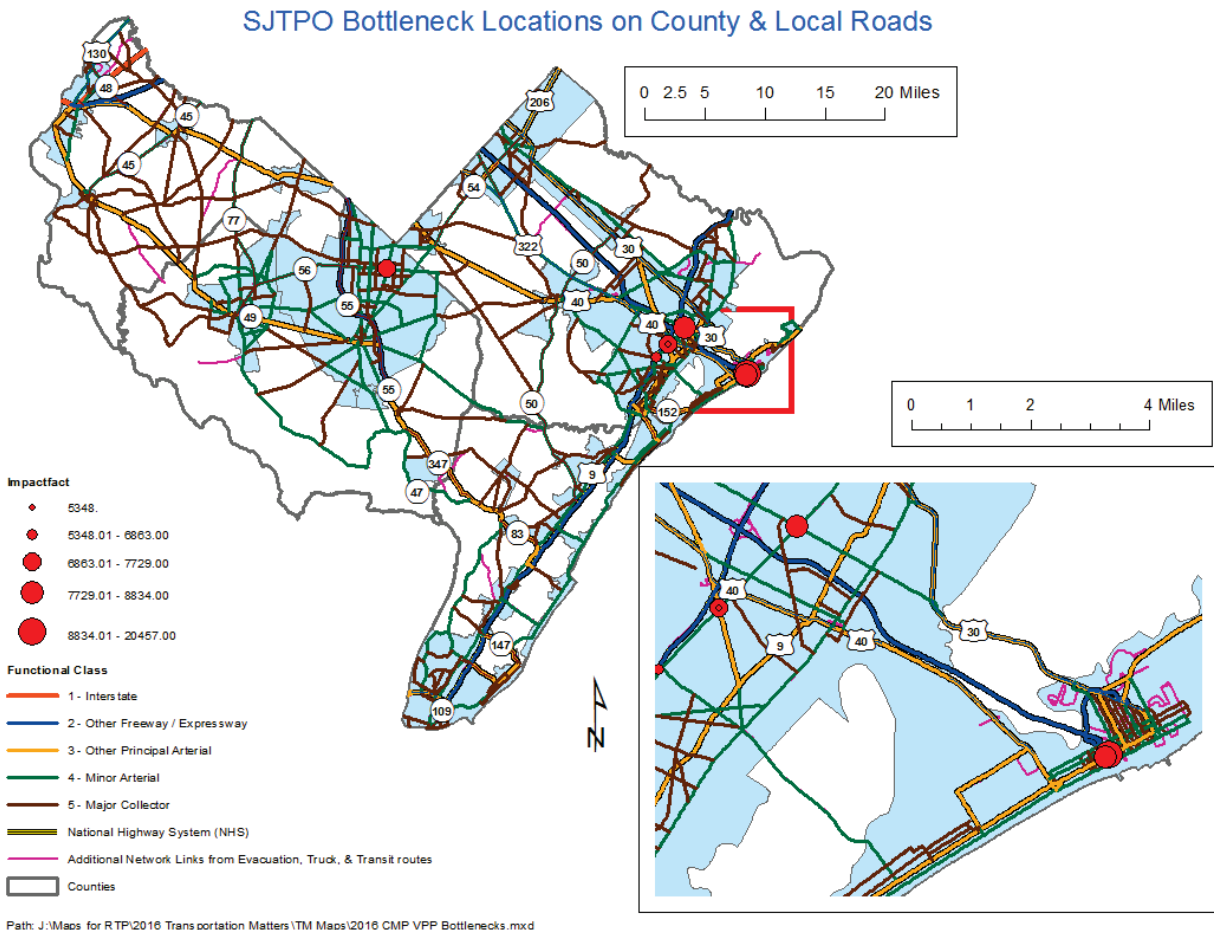
Identifying Congested Locations

The Locations of Interest table was the result of a two step process. We surveyed our planning partners for congested locations and scanned the network for bottleneck locations using the VPP Bottleneck tool.

2.1 Qualitative Data Collection from the SJTPO Technical Advisory Committee

There were no additional congestion locations identified by the SJTPO planning partners during this planning cycle.

Figure 2: Map of Bottleneck Locations



2.2 Quantitative Data Collection using Vehicle Probe Project

The Vehicle Probe Project (VPP) tool was used to locate bottleneck locations. The summer months of 2015 (June, July, August) was the time frame. To the extent possible, SJTPO conducted a network-wide scan of roads within the SJTPO region that are on the VPP network; although not all roads in the SJTPO region are part of the network. While the VPP network includes all the major Interstates, Authority, US, and State routes, it only covers some county roads.

3.0 Regional Network Congestion Management Performance

Regional Network Performance

In this section we used performance measures that depict network-wide congestion management performance. These indicators therefore are not used to identify specific locations of interest; rather, they are used to monitor the overall performance of the network. Data from multiple years and planning cycles allow for trends to be documented. In the event that data for multiple time periods is not available, the data collected for a single time period will establish a benchmark for future trend analysis. Evaluating the network performance is part of Step 8 of the CMP Methodology Process. The performance measures in Figure 3 relate to the network's congestion management performance. The performance measures depicted below are Planning Time Index, and Travel Time Index. These are defined in the SJTPO CMP Methodology Report, as cited above.

Figure 3: Network Congestion Management Performance

Travel Delay Planning Time Index ⁴	2013	2014	2015
NJ & US Routes	1.16	1.38	1.34
Local Routes	1.19	1.45	1.42

Travel Delay Travel Time Index ⁵	2013	2014	2015
NJ & US Routes	1.08	1.16	1.15
Local Routes	1.11	1.21	1.19

The above data indicates a slight increase in congestion between 2013 and 2015. Although congestion is not the most important issue for our region, SJTPO is committed to implementing projects and programs to make our network as efficient as possible. These projects and programs are detailed in the next section.

4.0 Identify and Assess Strategies

Studies from the current or prior planning cycles may lead to projects in this or future planning cycles. Studies may also lead to programs or operational policies that are carried out by our planning partners. During the study process, SJTPO and its partners will reach a consensus on the solutions after evaluating the alternatives. The projects or solutions that are detailed in the following section were the result of studies conducted either by consultants, the SJTPO staff, or its partners. The SJTPO engineering staff utilizes tools such as Synchro to identify and assess strategies that may evolve into projects.

⁴ NJ & US includes only routes designated NJ or US; does not include Interstate, ACE, or Parkway. Local Routes are those under county or municipal jurisdiction that are part of the VPP road inventory. Months measured are from May through August each year, Saturday only from 8:00-to10:00 PM

⁵ See Note 2

5.0 Strategy Selection and Programming

The following tables contain the projects, and programs that are part of the SJTPO CMP effort.

Figure 4: Projects and Programs Current Cycle:

Congestion Management Projects ⁶	Funding Source*	Phase **	Sponsor	Cost	Year
Traffic Signal Synchronization and Communications	CMAQ	CON	Atlantic City	\$0.964	FY14/ FY15
Atlantic Avenue Improvement Project	TAP	CON	Atlantic City	\$0.966	FY14
Somers Point Bikeway Extension Phase II	TAP	CON	Somers Point	\$0.171	FY14
Atlantic Avenue Transit Path Extension	TAP	CON	Egg Harbor City	\$0.296	FY14
Cape May Bikeway Network Expansion	SRTS	CON	Cape May Co.	\$0.350	FY14
Improving Air Quality and Reducing Traffic Congestion through Biking in Ocean City	CMAQ	CON	Cape May Co.	\$0.222	FY16
Sabater Elementary Safe Routes to School 2014, Phase 2	SRTS	CON	Vineland	\$0.275	FY14
Cumberland County Traffic Signal Improvements, CR 552 (Irving Avenue) & CR 606 (Laurel Street) and CR 697 (Atlantic Street) & CR 731 (Commerce Street)	CMAQ	DES / CON	Cumberland Co.	\$0.100 / \$0.550	FY15 / FY16
Millville Broad Street Traffic Signal Upgrades	CMAQ	DES / CON	Cumberland Co.	\$0.150 / \$0.825	FY16 / FY17
City of Vineland - Landis Avenue Signal Upgrades Phase I, Boulevards to Myrtle Street	CMAQ	CON	Vineland	\$1.750	FY15
City of Vineland - Landis Avenue Signal Upgrades Phase II, Boulevards to West Avenue	CMAQ	CON	Vineland	\$1.000	FY16
Maurice River Bikeway Trail - Phase V	TAP	CON	Millville	\$0.517	FY14

* Funding Source:

- CMAQ- Congestion Mitigation and Air Quality
- TAP—Transportation Alternatives Program
- SRTS—Safe Routes to School

** Programmed Phase:

- CON=Construction phase
- DES=Design phase

⁶ See Appendix II for more detail on SJTPO TIP projects related to CMP.

6.0 Strategy & CMP Evaluation

This part of the CMP involves evaluating both the strategies that were employed and the CMP itself. A comprehensive list of commonly employed congestion mitigation strategies can be found at www.sjtpo.org/Documents/CMP/FY13-16_CMPMethodologyReport.pdf.

Projects and Programs Evaluation

This is accomplished through use of before and after studies. Relevant data for three years before and after a project or program is implemented needed for an effective evaluation. The VPP Suite can be used to do this type of analysis. These will be done as part of a future work program.

Evaluation of the CMP Itself

SJTPO will determine the effectiveness of its CMP in two ways. One is through a network performance evaluation as seen in Section 3). Another is through analysis of the SJTPO CMP's impact on the SJTPO RTP and the plans of our partners. We have seen in Section 3 that even though congestion has increased over the past few years, it is still not a primary issue for this region. We have seen in Section 5, above, that our CMP process has produced TIP projects. These TIP projects are part of *Transportation Matters-A Plan for South Jersey*. We will also evaluate our CMP effectiveness by monitoring the future plans, projects, and programs of our planning partners.

7.0 Ongoing and Future CMP Activities

The studies, projects and programs are the result of staff and subregional activity that supports the congestion management process. SJTPO has a formal work task exclusively dedicated to the Congestion Management Process. Other UPWP staff activities also contribute to the congestion management process. Those activities are:

- Regional & Corridor Planning & Current Regional Issues
- Regional Transportation Plan (RTP) Implementation
- Transportation Safety Planning
- Geographic Information Systems
- Transportation Improvement Program
- Air Quality Planning
- Local Preliminary Engineering and Design Program
- Administration and Internal Management

The Subregional and Technical Program portion of the UPWP include county staff activities and technical studies that are funded through SJTPO. Many of the activities and studies contribute to reducing or preventing congestion in the region. This section summarizes that activity.

FY 2013

SJTPO Central Staff

- Obtained PC Travel and GPS antenna and did travel time runs on seasonal routes
- Gained access to I-95 Corridor archived operations data and the Vehicle Probe Project (VPP)
- Helped develop CMP and other Management Systems performance measures (PM) as required by MAP-21 process
- Participated in MAP-21 Traffic Congestion & NHS Performance Measures Webinar
- SJTPO, in cooperation with its counties, prepared and submitted to NJDOT a list of severely congested intersections in the region (in response to a request from NJDOT)
- Prepared Technical Memorandum for Cumberland County regarding Multi-way Stop and Traffic Signal Control Analysis (Nov.)
- Cumberland County Mobility Management Study – Completed on March 31, and final invoice paid in May 2013. Staff worked with the County to revise the County project report.
- Collected operations data, developed performance measures, used Vehicle Probe Project data to generate performance measures for major regional roadways
- Participated in NJ ITS Architecture Update; attended consultant selection, kickoff, and subsequent meetings and workshops

County and Subregional Studies:

Atlantic County

- Report: Assessment of Bus Stop /Shelter Accessibility and Safety- This project involved the survey and evaluation of 92 bus stops along 10 County routes. Each bus stop was evaluated based on seven general categories, including stop location, landing area assessment, pedestrian amenities, and safety. Problems and observations were summarized in the Report introduction, and each stop location was plotted on a GIS map with a relational connection to the bus stop survey forms (all products provided to SJTPO)
- Product: FY 2013 Atlantic City Rail Survey (presentation)

FY 2014

SJTPO Central Staff

- Collected operations data, developed performance measures, used VPP data to generate PMs for major roadways in the SJTPO Sub-region
- List of FY 2014 Local CMAQ projects compiled and approved by Board

County and Subregional Studies:

Atlantic County

- Trip generation and traffic volume assessment on Atlantic County Roads for impact fee assessment and traffic analysis for major development applications and other minor development and site plans.

Cape May County

- Bikeway Planning: The County participated in the joint planning initiative of Middle Township, Lower Township, and the Delaware River & Bay Authority for the completion of the missing links of bicycle facilities from the Cape May County Park in Middle Township to the Cape May Lewes Ferry in Lower Township.
- The County filed an application with NJDOT for funding a bicycle path on Seashore Road in Lower Township, which would provide connectivity from the existing trail system to the West Cape May bicycle path
- County Park Department applied to the Planning Department's Division of Open Space for a bikeway / bike path in the Diamond Beach section of Lower Township and connectivity to the US Fish & Wildlife Service Two Mile Beach Unit of the Cape May National Wildlife Refuge.

Salem County

- Completion of County Traffic Travel Time/ Speed Study

FY 2015

SJTPO Central Staff:

- Attended NJDOT Complete Streets Training at Monroe Township Public Library (May)
- Attended meeting for NJDOT Traffic Signal Optimization Plan (June).
- Attended DVRPC CMP Advisory Committee Meeting (April)
- Attended Complete Team meeting at NJDOT (May, June)
- Participated in VPP User Group web conference
- Board approved FY 2015 Local CMAQ projects
- Prepared CMP FY 2013-2016 Report and held CMP Advisory Committee workshop
- Compared seasonal/off-season counts to assist NJDOT in improving seasonal factors
- Reviewed and completed list of desired locations to conduct traffic counts for CMP (as well as other purposes).
- Analyzed Vehicle Probe Project travel-time data for system performance measurement, focusing on seasonal travel in the SJTPO region
- Reviewed and submitted comments to the ITS Architecture Update Committee for the New Jersey TSM&O Strategic Plan and ITS Architecture Update Final Report
- Reviewed Cross County Connection (CCC) work plan and met with CCC bicycle and GIS staff
- Attended Web Meeting: DVRPC CMP Advisory Committee – which focused on the use of travel time index (TTI) as measure for limited access and arterial roadways with recurring congestion (Sept.)
- Route 40/322 Corridor Planning Study meeting (Aug.)
- Intelligent Transportation Systems (ITS) Projects meeting at NJDOT related to the State's plan for their Traffic Signal Upgrade Program
- NJDOT Complete Team Meetings (Dec.,Feb)
- NJDOT Complete Streets Training Course held at Monroe Township Public Library (May)
- NJ Council on Access and Mobility Meeting (May)

County and Subregional Studies:

Atlantic County

- FY 2015 Atlantic County Transportation Plan Element (July, 2015)
- Trip generation and traffic volume assessment on Atlantic County Roads for impact fee assessment and traffic analysis for development applications and other minor development and site plans:
- Brigantine City Transportation enhancement meeting
- Atlantic County Bikeway meeting

Cape May County

- Bikeway Planning - The County continues to participate in the joint planning initiative of Middle Township, Lower Township, and the Delaware River & Bay Authority for the completion of the missing links of bicycle facilities from the Cape May County Park in Middle Township to the Cape May Lewes Ferry in Lower Township.
- Other – Bike path meetings with Lower, Middle, DRBA, USFWS
- Review of several bicycle facility applications via Open Space Board
- We have reviewed development applications for their potential impact on County, municipal, and state roadways, including traffic and drainage issues.
- County staff continues to work with local municipalities via the Open Space Program to develop a countywide bicycle path system. The County's TIP was kept current and on track.
- The County Planning Department is working with the South Jersey Economic Development District and the 16 local municipalities on the development of a Regional Bike Path Strategy and Implementation Program, including connectivity with adjacent counties
- Data File Update – GIS data for bicycle facilities, walking trails, and park/recreation areas county-wide was updated as additional information was received from municipalities; it is made available on the County's Internet Map Server site at www.capemaycountym.net
- Other – The County continues to work with the Delaware River and Bay Authority on master planning and conceptual design for the Cape May County Airport; new transportation corridors and connectivity on- and off-site were issues addressed by the planning committee

Cumberland County

- Cumberland County Intersection Study of Six Intersections(July, 2015)
- Bikeway Planning – continued discussions about Green Acres rail to trail acquisitions with Maurice River Township
- County Growth Management Plan Update– First draft with updated mapping

Salem County

- Salem County Growth Management Element of the Comprehensive County Master Plan (Completed June 30, 2015)

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