



REGIONAL TRANSPORTATION PLAN 2050

MOVING SOUTH JERSEY FORWARD

APPENDIX G CMAQ PERFORMANCE PLAN

**South Jersey
Transportation
Planning Organization**

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Photo: East Point Lighthouse,
Maurice River Township, New Jersey



SJTPO CMAQ PERFORMANCE PLAN

South Jersey Transportation Planning Organization, Vineland, New Jersey

Part of Philadelphia, PA—NJ—DE—MD Urbanized Area (UZA) and Atlantic City, NJ UZA

1. Background/Introduction

Per the System Performance Rules, as laid out in 23 CFR 490.105(f)(6)(iii), if an MPO is a Transportation Management Agency (TMA)¹ and if any part of a designated nonattainment and maintenance area within the metropolitan planning area overlaps the boundary of an urbanized area with a population more than 1 million in population, that MPO shall establish both 2-year and 4-year targets for their metropolitan planning area, and prepare a Congestion Mitigation Air Quality (CMAQ) Performance Plan (as specified in 23 CFR 490.107(c)(3)). Since a portion of the 8-Hour Ozone nonattainment area within the SJTPO metropolitan planning boundary overlaps with the Philadelphia, PA-NJ-DE-MD Urbanized Area, which has a population of approximately 5.4 million, it is subject to this requirement. While the SJTPO region also includes the Atlantic City, NJ Urbanized Area, with a population of approximately 248,000 (less than 1 million), it is not subject to reporting CMAQ congestion targets until the next 4-year performance period, starting in 2022.

As with many MPOs in non-attainment areas, the SJTPO has a competitive process in which it solicits projects to be funded under the Congestion Mitigation Air Quality Program (CMAQ) program. Projects are eligible for CMAQ funding if they are intended to reduce emissions in the region; either through direct means (such as converting to low-emission vehicles) or through indirect means (e.g., traffic signal improvements that improve vehicle flow and reduce congestion). Government, non-profit and private entities are eligible to apply. Applicants must include specific information as part of their application, including: a detailed description of the project, the amount of CMAQ funding being requested, a project cost estimate, a project schedule, certification of the project sponsor's familiarity with the NJDOT Local Aid process, and an overview of any preliminary work that has been done such as prior planning studies or data collection activities.

An assessment of the project's expected emission reduction benefits (specifically; the reduction in ozone precursors of NO_x and VOC, in kilograms per day or per year), along with the expected lifespan of the emissions reduction should also be completed. SJTPO frequently assists project applicants in completing emissions estimates using NJDOT's AQONE (Air Quality Off-Network Estimator) software. AQONE was developed for use in NJDOT's CMAQ program by the consulting firm Michael Baker, Inc., and is frequently updated with updated emission rates and emission estimation methodologies.

CMAQ applications are scored by a CMAQ Selection Committee, which is designated by the SJTPO Technical Advisory Committee. The CMAQ Selection Committee is comprised of SJTPO staff, SJTPO Technical Advisory Committee members, and representatives from NJDOT's Transportation and Air Quality unit. Applications are scored in accordance with federal CMAQ guidance, with the main scoring criterion being the cost-effectiveness of the expected emissions benefit.

¹ A TMA is a Transportation Management Area (TMA) means an urbanized area with a population over 200,000, as defined by the Bureau of the Census and designated by the Secretary of Transportation. (23 CFR 450.104)

Solicitation is conducted annually, although, as SJTPO's CMAQ Program is currently over-subscribed due to a backlog of projects programmed for funding but still pending authorization, there will not be a new call for projects for the Federal Fiscal Year (FY) 2019. Additional information and guidance on SJTPO's CMAQ process is available at: www.sjtpo.org/cmaq. SJTPO continues to work with all project sponsors throughout the project authorization process.

2. Baseline Condition/Performance and Targets

Two major performance areas fall under the CMAQ program: Traffic Congestion and Emissions. For these particular measures, Federal regulations called for MPOs and State DOTs to report both a baseline conditions assessment as well as a 2- (except for the Peak Hour Excessive Delay (PHED) measure, below) and 4-year target. Targets were set at conservative levels to ensure a realistic as possible chance of attainment. In developing these baseline measures and targets, the SJTPO coordinated extensively with NJDOT as well as the other New Jersey MPO's to ensure consistency to the maximum extent possible.

1.1. CMAQ Traffic Congestion Measures

Within the Traffic Congestion performance area, two performance measures are required. For these measures, a single target is required for the entire urbanized area. On May 21, 2018, the SJTPO Policy Board approved the urbanized area targets for the two CMAQ Traffic Congestion measures below.

1.1.1. Peak-Hour Excessive Delay (PHED)

The Peak Hour Excessive Delay (PHED) measure indicates the extra time spent traveling due to extreme congestion, expressed as the number of hours per year on a per capita basis. For this specific measure, a 4-year target was required. The metric is: Annual Hours of PHED per capita on the National Highway System (NHS). A current (calendar year 2017) PHED estimate of 16.8 hours per capita was used to calculate the 4-year target. The 4-year target for the entire Philadelphia (PA-NJ-DE-MD) Urbanized Area is 17.2 Annual Hours of PHED per capita. This assumes an annual growth rate of approximately 0.6%/year. A 2-year target is not required for this particular measure.

1.1.2. Percent of Non-Single-Occupancy Vehicle (SOV) Travel

The Non-SOV Travel measure indicates the amount of travel not by single-occupant vehicle (SOV), including modes such as walk, bus, carpool, train, bicycle, taxi, rideshare, and work at home. The Philadelphia (PA-NJ-DE-MD) Urbanized Area used the American Community Survey (ACS) 5-year (2012-2016) estimates for journey to work trips for residents within the urbanized area. The metric utilized is Percent of Non-SOV Travel in the urbanized area. The parties² constituting the Philadelphia (PA-NJ-DE-MD) Urbanized Area agreed upon a current estimate of 27.9% non-SOV travel, a 2-year target of 28.0%, and a 4-year target of 28.1%, respectively.³ This assumes an annual growth rate of approximately 0.1%/year.

² The parties constituting the Philadelphia Urbanized Area included: DVRPC, NJDOT, NJTPA, WILMAPCO, Lehigh Valley Planning Commission, Berks Co. and Lancaster County MPOs.

³ The 2017 baseline was based on the 2012–2016 5-Year ACS. Using that and the 2007-2011 ACS, a linear trend was established to come up with the 2- and 4-year targets.



2.2. On-Road Mobile Source Emissions Measures

The On-Road Mobile Source Emissions measure covers expected emissions reduction benefits by pollutant from all investments made through the CMAQ Program. As SJTPO falls within the Philadelphia- Wilmington-Atlantic City PA-NJ-MD-DE 8-Hour Ozone Non-Attainment Area, it must report this measure. The specific metrics are kilograms/day of Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NOx), both ozone precursors. The target values are based on emissions reduction benefits recorded in the FHWA CMAQ Public Access database for fiscal years 2014-2017. For this measure, the baseline conditions, two- and four-year targets must be reported.

The baseline values for these emissions measures have been adjusted from those found in the CMAQ Public Access System and are cumulative emissions reductions from FY 2014 through FY 2017. [Table 1](#), below, contains a more detailed breakdown of the emissions benefits used in calculating the baseline. For VOCs, SJTPO is reporting a baseline of 9.466 kg/day, and a baseline of 22.446 kg/day of NOx. Projections for each of the two baseline measures were based on projected emissions reductions for FY 2018-19 for the two-year target, and FY 2018-2021 for the four-year target, respectively. The targets assume a declining return in emissions reduction benefits with the implementation of tighter fuel and vehicle emission standards, combined with fleet turnover and newer cars being cleaner. The trends in the average emissions rates were developed using EPA’s MOVES 2014a emissions model using county default data. As depicted in Table 2, below, for the VOC two-year target (covering projections from FY 2018-19), SJTPO is projecting an emissions reduction benefit of 2.207 kg/day, and a four-year target (covering projections from FY 2018-2021) emissions reduction benefit of 6.142 kg/day, respectively. For the NOx two-year target, SJTPO is projecting an emissions reduction benefit of 5.226 kg/day, and a four-year target of 14.245 kg/day of emissions reductions, respectively. These projections assume that future CMAQ projects will produce similar benefits to those projects that were funded through CMAQ in the baseline period. Further details on the methodology and assumptions utilized in calculating the baseline and targets are included in the separate technical memorandum that is included as part of [Appendix 1](#), below.

Table 1: Emissions Reduction Benefits Used in Calculating Baseline

SJTPO Updated Baseline (NJ TRANSIT & Modifications)				
Year	Sum of Emissions Reduction Benefits (kg/day)			
	VOC	CO	NOx	PM2.5
2014	0.000	0.010	0.000	0.000
2015	0.268	2.160	0.268	0.003
2016	4.808	29.915	2.368	1.656
2017	4.390	6.130	19.810	0.900
	9.466		22.446	

As SJTPO is in attainment for both CO⁴ and PM2.5, emissions reductions are not included for these pollutants. Further, as stated above, because of the backlog of projects in the CMAQ pipeline. (i.e., projects that have been approved by the SJTPO Policy Board but not yet authorized for funding), SJTPO will not be soliciting any new CMAQ projects for FY 2019. As such, no emissions reduction benefits are recorded for that year.

⁴ A small portion of the SJTPO region: Penns Grove in Salem County, and Atlantic City in Atlantic County are “not classified” for CO, meaning there is not enough data to make an adequate determination.

Table 2: Total Emissions Reductions Projects - SJTPO

FY Year	SJTPO Forecasts and Targets			
	Total Emissions Benefits Projections (kg/day)			
	VOC	CO*	NOx	PM2.5*
2018	2.207		5.226	
2019**				
2020	2.007		4.642	
2021	1.929		4.377	
Sum '18-'19	2.207		5.226	
Sum '18-'21	6.142		14.245	

* No CO or PM2.5 as SJTPO meets the NAAQS for these pollutants

** SJTPO anticipates completing backlog in FY2019w/ no new projects

3. Description of Projects—How projects identified for CMAQ funding will contribute to achievement of targets

Table 3 below identifies future planned projects that we anticipate will help the SJTPO region meets its CMAQ mobile source emissions targets specified above. These projects that have not yet been programmed into the CMAQ Public Access database, but we expect them to be implemented some time within the FY 2018-2021 performance period and thus help us attain our mobile source emissions targets. For the local CMAQ Program, SJTPO currently solicits projects to be funded on an annual basis as opposed to several years in advance. As noted above, because the program is oversubscribed (i.e., while projects have been approved by the SJTPO Policy Board, they have not yet been authorized for funding), there was no solicitation for FY 2019 projects, and likely will not be one for FY 2020. However, as depicted in Table 3, below, there are some FY 2018 projects that have not yet been formally entered into the CMAQ Public Access database, as well as projects funded under the Statewide CMAQ program which we anticipate will help us meet the mobile source emissions reduction targets. Further, some of the projects that have already been reported in the CMAQ Public Access System have not yet been authorized for construction, so emissions benefits from these projects once they are completed will also likely help SJTPO to meet their emissions reduction targets. A column indicating the current status (FY 2020) of each planned CMAQ project has been added for the RTP 2050.



Table 3: New CMAQ Projects

State Project ID	CMAQ Project ID	TIP Program Year (FY)	Project Type	Project Title	Additional Project Description	Emissions Benefit (Q/A)	Traffic Congestion Benefit? (PHED)	Traffic Congestion Benefit? (Non-SOV)	New (N) or Continuing (C) Project?	STATUS FY 2020
3.1. Local CMAQ Projects not yet reported in CMAQ Public Access database										
		2018		Roosevelt Blvd./34th Street Advanced Traffic Signal Project		Yes—improved operations, less idling	Yes	No	N	Moved to FY 2021, FY 2022
		2018		Purchase of Eight (8) Replacement Paratransit Passenger Buses (flex to NJ Transit)		Yes, cleaner vehicles and fuels	Possibly, removing SOV's off road.	Yes	N	Moved to FY 2020
		2018		Procurement of 7 low emission, unleaded fuel, body on chassis mini-buses (flex to NJ Transit)		Yes, cleaner vehicles	Possibly, removing SOV's off road.	Yes	N	Moved to FY 2020
		2018		It Pay\$ to Plug In: New Jersey's Electric Vehicle Charging Grants Program		Yes, cleaner vehicles	No	No	N	Moved to FY 2021
		2018		Landis & Mill, Landis & Orchard Traffic Signal Upgrades		Yes—improved operations, less idling	Yes	No	N	Moved to FY 2021

State Project ID	CMAQ Project ID	TIP Program Year (FY)	Project Type	Project Title	Additional Project Description	Emissions Benefit (Q/A)	Traffic Congestion Benefit? (PHED)	Traffic Congestion Benefit? (Non-SOV)	New (N) or Continuing (C) Project?	STATUS FY 2020
3.2 Statewide CMAQ Projects										
13303		FY 2018-21		Active Traffic Management System	This program will provide funding for the deployment program for the first Active Traffic Management System (ATMS) in the State including all phases of design. This program will include funding for the complete delivery of the Final Design document for Active Traffic Management System (ATMS) for a candidate highway (I-80, I-295 or I-78). The design document will be used to deploy and carry out the actual construction of this technology for automatic operation and handling of traffic.	Yes—improved operations, less idling	Yes—improved operation s.	No	N	Ongoing.
X185		FY 2018-21		Bicycle & Pedestrian Facilities/ Accommodations	This is a comprehensive program to insure the broad implementation of the Statewide Bicycle and Pedestrian Master Plan, Complete Streets Policy and the implementation of federal and state policies and procedures pertaining to bicycle, pedestrian, transit and ADA access and safety. This program includes addressing bicycle, pedestrian, transit and ADA travel needs through the development of improvements on state, county and local system either by independent capital projects or through grants to counties and municipalities. Projects must make full consideration for the needs of all users.	Yes.	Yes, reduces vehicles on road	Yes.	N	Mostly on schedule; Statewide Bicycle and Pedestrian Master Plan behind schedule.
15343		FY 2018-21		Intelligent Traffic Signal Systems	This program will seek to improve mobility on New Jersey’s arterial highways. Arterials contribute almost 70% of total congestion that occurs in New Jersey. This program will focus on dynamically managing NJ’s arterials from NJDOT’s Arterial Management Center. Existing traffic signals will be strategically, systematically and programmatically upgraded from standalone signals to highly sophisticated, coordinated, real time traffic response traffic signals. This upgrade will consist of installing new controllers, intelligent software and algorithms, robust detection and communication. This is a plan to upgrade most of the signals on NJDOT owned highways only.	Yes—improved operations, less idling	Yes—improved operation s	No	N	Ongoing.
X43		FY 2018-21		Transportation Demand Management Program Support	This funding is utilized to continue the management of the Owned and Leased Park and Ride Program and the remaining efforts as they relate to the 1-800-CARPOOL program which also includes maintaining the RidePro ride matching software program.	Yes—improved operations	Yes—reduces SOVs	Yes.	C	Still in operation. In FY20 STIP as DB X28B.



T112	FY 2018-21	Rail Rolling Stock Procurement	<p>This program provides funds for the replacement of rail rolling stock, including engineering assistance and project management, to replace over-aged equipment including rail cars, revenue service locomotives, and expansion of NJ TRANSIT rolling stock fleet (cars and locomotives) to accommodate projected ridership growth and other system enhancements over the next ten years. Funding is provided to support vehicles\equipment (for rail operations). Annual funds are provided for Comet V single-level car lease payments, Electric Locomotive lease payments, Diesel Locomotive lease payments, Dual Power Locomotives and Multi-Level rail car lease payments and other upcoming rolling stock lease payments. Pay-as-you-go funding is also programmed for Multi-Level vehicles and other rolling stock. Toll Credit will be used as the non-federal match. An explanation of toll credit can be found in the Introduction Section of the STIP. CMAQ: Funding for Rail Rolling Stock Procurement will include CMAQ funds. Rail Rolling Stock Procurement is CMAQ eligible because it meets federal eligibility requirements. The project will provide funding for the purchase of Multi-Level Coaches and Multi-Level EMU vehicles. For the CMAQ justification see "CMAQ Report for NJ TRANSIT". This project is funded under the provisions of Section 13 of P.L. 1995, c.108.</p>	Supporting rail transit operations reduces emission by reducing SOV travel.	Maintainin g transit vehicles and supporting transit operations reduce congestion.	Maintaining transit vehicles and supporting transit operations reduce SOV travel.	C	Funded for FY 2020; expected to be used FY 2020.
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4. Policy Board Approval and Next Steps

The SJTPO Policy Board approved the CMAQ Congestion Targets on May 21, 2018, and, the SJTPO Policy Board is expected to approve the CMAQ emission reduction targets on September 24, 2018. SJTPO's CMAQ Emission Reductions were aggregated with the CMAQ Emissions Reductions from the other two MPOs in New Jersey to come up with a Statewide total. These are included in the NJDOT Baseline Performance Report. Throughout the ensuing 2 and 4-year performance periods, in addition to monitoring those projects listed above, SJTPO will continue to program new projects and programs that will help contribute towards attainment of these targets. SJTPO will have the opportunity to adjust these targets in the biennial update to the CMAQ Performance Plan, to be submitted with the mid-Performance Period Progress Report, due to the USDOT by October 1, 2020.



From: Robert d’Abadie, MBI

To: NJDOT Department of Statewide Planning
New Jersey Metropolitan Planning Organizations

Date: May 14th, 2018

Subject: Establishment of State DOT Targets for PM-3 Performance Measure – On-Road Mobile Source Emissions Reduction for CMAQ-funded Projects [23 CFR 490.105]

Introduction

The Federal Highway Administration (FHWA) final rule for the National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program was published in the Federal Register (82 FR 5970) on January 18, 2017 and became effective on May 20, 2017.

This final rule is the third in a series of three related rulemakings that together establishes a set of performance measures for State Departments of Transportation (State DOTs) and Metropolitan Planning Organizations (MPOs) to use as required by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America’s Surface Transportation (FAST) Act. The measures in this third final rule will be used by State DOTs and MPOs to assess the performance of the Interstate and non-Interstate National Highway System (NHS) for the purpose of carrying out the National Highway Performance Program (NHPP); to assess freight movement on the Interstate System; and to assess traffic congestion and on-road mobile source emissions for the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. These system performance measures are collectively referred to as the PM-3 measures.

State DOTs are required to establish targets in coordination with MPOs for all the measures in this rule by May 20, 2018. MPOs will have an additional 180 days beyond that date to either set their own targets or agree to the State DOT targets. In addition, State DOTs will need to report on performance at regular intervals. The first State DOT baseline performance period report is due October 1, 2018, for all measures in this rule.

Discussion

- PM-3 System Performance Measures includes details on several measures. This memorandum focuses solely on the On-Road Mobile Source Emissions Reduction for CMAQ-funded Projects.
- State DOT 2- and 4-year targets are due May 20, 2018 and will also be reported to FHWA in the 2017 baseline report due October 1, 2018. To satisfy coordination requirements [23 CFR

490.105(e)(2)], NJDOT has coordinated with Planning Partners in the development of the measures and selection of targets, specially all three of the NJ Metropolitan Planning Organizations (MPOs) and the New Jersey Department of Environmental Protection (NJDEP.)

- While clarification is required on the topic, the on-road emissions benefits targets were developed under the premise that Statewide (DOT) and MPO values should be harmonized.
- Due to the absence of detailed FHWA guidance and the need for additional research understanding the variances and factors influencing each of the performance measures, NJDOT has established conservative targets. States are permitted to adjust their 4-year targets at the midterm of the performance period, representing data through 2019 in a report due to FHWA by October 1, 2020. NJDOT will coordinate any updates to the performance measures with the Planning Partners.

Coordination

- Throughout the development of the CMAQ On-road emission targets, technical staff of the planning partners were continually engaged for input into the process
- In addition to smaller consultation effort, webinars were held with all planning partners on March 22nd and May 10th, 2018 to discuss the initial approach and final process/methodology, inclusive of all data assumptions.
- MPO technical staff will be given the opportunity to review the base data, data modifications, approach and final calculations. Concurrence with general approach will be requested at that time, with the understanding that each MPO will need to seek approval from their respective executive committees prior to the targets being official.

Establishing CMAQ On-road Emissions Benefits Targets

- While the MPOs must establish targets no later than 180 days after the respective State DOT(s) establishes (or amends in future) their targets, this timeline would not necessarily meet the October 1st, 2018 deadline for the Baseline Report. Currently it is assumed that the October 1st deadline governs.
- In recognition of this discrepancy, NJDOT lead the effort to help streamline the process. Targets were developed at the MPO level and aggregated to establish the statewide target. This approach simplifies MPO review and should provide MPOs with acceptable, harmonized targets.
- The MPOs must establish targets by either:
 - Agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for that performance measure; or
 - Committing to a quantifiable target for that performance measure for their metropolitan planning area.
- The MPOs must report baseline condition/performance and progress toward the achievement of their targets in the system performance report in the metropolitan transportation plan.
- Final draft MPO and Statewide targets are summarized in Exhibit A.



Exhibit A: PM-3 Baseline and Target Values for CMAQ Emission Measures

Measure	MPO	Emissions (kg/day)	
		2019 2-year Target	2021 4-year Target
VOC Emissions	Statewide	19.779	38.421
	DVRPC (NJ only)	1.450	2.864
	NJTPA	14.026	27.318
	SJTPO	4.303	8.239
NO _x Emissions	Statewide	119.309	236.758
	DVRPC (NJ only)	7.453	14.861
	NJTPA	101.722	202.745
	SJTPO	10.133	19.152
PM _{2.5} Emissions	Statewide	4.290	8.520
	DVRPC (NJ only)	2.627	5.253
	NJTPA	1.663	3.267
CO Emissions	Statewide	31.927	63.101
	NJTPA	31.927	63.101

Data Considerations

- Target development began by reviewing the reported emission benefits in FHWA’s CMAQ Public access database for fiscal years 2014-2017. A summary of the emissions benefits in the CMAQ public can be found in Exhibit B.
- It was noted that going forward NJDOT will be updating the data entry conventions for greater uniformity. Any targets need to reflect this updated approach.
- The MPO and NJDOT staff reviewed the 2014-2017 project information from the CMAQ Public Access Database.
 - Suggestions on which projects should be coded as qualitative for target setting and/or errors that should be corrected were incorporated into the target setting process.
- Benefits of NJ Transit Projects are not currently in the FHWA CMAQ Public Access Database.
 - NJ Transit has provided estimated emissions impacts for their 2014-2017 CMAQ projects.
 - Full benefit of each NJ Transit project was assigned to MPOs in which it was located.
 - Summary of the NJ Transit projects can found in Exhibit C
- Emission benefits of “Statewide/no MPO assigned” projects (representing some of the NJDOT efforts) were distributed among the MPOs for target setting.
 - Benefits of these projects were distributed using the ratio of the MPO/Statewide Vehicle Miles of Travel (VMT) as reported in the 2016 Highway Performance Monitoring System (HPMS)
- One-time “heavy hitter” projects were not considered in target setting.
 - MPOs identified instances where staff was doubtful of projects similar in magnitude could be identified and implemented in the foreseeable future.
 - The approach avoids setting unattainable targets.

- Benefits of continuing projects were only considered in first year the project received CMAQ funding
 - This is the FHWA convention and is used regardless of ongoing project benefits.
- Projects with entry errors/erroneously high impacts were assumed to be qualitative for the purposes of targeting setting.
- The adjusted baseline emissions, inclusive of missing NJ Transit projects and MPO/NJDOT recommended adjustments, can be found in Exhibit D

Forecasting Considerations

- Targets reflect fleet turnover (average fleet becoming cleaner) as applicable
 - Implementation of Fuel and vehicle emission standards, combined with fleet turnover, results in declining returns for emission reduction for the same trip/delay reduction
 - Trends in average emissions rates were developed using MOVES2014a run using included county default data
- Diesel Retrofits/alternative fuels/Vehicle Technology projects were considered separately
 - Emissions benefits for this class of projects were calculated using specific vehicle model years/technology involved.
 - There is no need to adjust these results as a result and there is no need to consider overall emission rate trends for these specific projects.
- Targets were only developed for the pollutants for which area is considered nonattainment or maintenance.
 - NJTPA – Ozone (VOC + NO_x), PM_{2.5} and CO
 - DVRPC – Ozone (VOC + NO_x) and PM_{2.5}
 - SJTPO – Ozone (VOC + NO_x) only
- Statewide targets are the sum of MPO Targets.
- Special considerations were made in the NJTPA region
 - It was assumed that all CMAQ related PM_{2.5} benefits occurred entirely within the boundaries of PM_{2.5} non-attainment area, and the entire benefit was considered in the development of PM_{2.5} targets.
 - CO targets in the NJTPA region considered the following factors:
 - The NJTPA CO maintenance area is a small sub-section of the MPO.
 - No definitive way to know how much of CO reduction from CMAQ projects occurs within the CO maintenance area.
 - For the purposes of target setting, the total reported NJTPA CMAQ CO benefits were factored using the ratio of the 2016 HPMS VMT within Passaic, Essex, Bergen, Hudson and Union counties (the majority of the CO non-attainment area) to total VMT in the MPO.
- Final MPO and Statewide targets for the CMAQ On-Road Emissions Benefit Calculation can be found in Exhibit E.



Exhibit B: Summary of Emissions Benefits found in the CMAQ Public Access System

DVRPC Baseline				
FY Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	4.300	100.220	13.300	0.105
2015	9.580	99.301	97.160	0.106
2016	0.770	9.740	2.740	0.140
2017	14.650	85.340	206.650	14.180

NJTPA Baseline				
Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	9.200	67.590	54.880	3.231
2015	9.300	68.510	136.500	0.011
2016	0.080	0.340	114.000	9.900
2017	0.000	0.000	0.000	0.000

SJTPO Forecasts				
Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	3.790	17.490	1.190	0.008
2015	0.418	2.230	3.208	0.004
2016	0.000	0.000	0.000	0.000
2017	4.390	6.130	19.810	0.900

Projects not assigned to Specific MPO				
Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	0.960	0.000	1.320	0.000
2015	0.960	0.000	1.320	0.000
2016	46.640	941.350	170.830	0.000
2017	0.000	0.000	0.000	0.000

Exhibit C: NJ Transit Project Impacts

Year	MPO	Project Title	Project Description	Project Classification	VOC	CO	NO _x	PM _{2.5}	Included in Target Setting
					(kg/day)				
2014	DVRPC	River Line Clean Engine Replacement	Replace engines on the River Line diesel light-rail vehicles from Tier 1 to Tier 4 standard	Diesel Related	104.4	N/A	827.6	48.9	No
2015	NJTPA	One-Seat Ride Rail Service Enhancement	Trips diverted due to enhanced transit service on the north Jersey Coast Line and Raritan Valley lines	Non-Diesel	11.96	0	11.88	0.864	Yes
2016	SJTPO	Atlantic and Cape May Bus Repl Part 1	Emissions reduced due to new buses	Diesel Related	3.32	N/A	1.42	N/A	Yes
2016	SJTPO	Atlantic and Cape May Bus Repl Part 2	Trips diverted from auto due to new buses	Non-Diesel	0.06	N/A	0.1	N/A	Yes
2016	NJTPA	Multi-Level MU Rail Cars	Trips diverted due to new, higher capacity multi-unit electric powered rail cars	Non-Diesel	0.8	25.14	1.04	0.12	Yes



Exhibit D: Modified Baseline Emission Benefits by MPO*

DVRPC Updated Baseline (NJ Transit + Modifications)				
FY Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	0.000	0.020	0.320	0.001
2015	0.750	2.981	0.730	0.004
2016	0.170	2.859	0.684	0.025
2017	2.170	18.580	13.350	5.230

NJTPA Updated Baseline (NJ Transit + Modifications)				
Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	0.080	0.830	0.040	0.001
2015	12.140	1.750	12.080	0.865
2016	19.717	169.035	194.651	3.446
2017	0.000	0.000	0.000	0.000

SJTPO Updated Baseline (NJ Transit and Modifications)				
Year	Sum of Emissions Benefits (kg/Day)			
	VOC	CO	NO_x	PM_{2.5}
2014	0.000	0.010	0.000	0.000
2015	0.268	2.160	0.268	0.003
2016	4.808	29.915	2.368	1.656
2017	4.390	6.130	19.810	0.900

* Includes NJ Transit Projects and Distributed Benefits of Statewide/No MPO Assigned Projects

Exhibit E: Final Targets By MPO, Plus Statewide Targets Equaling the Sum of MPO Values

DVRPC Forecasts and Targets

FY Year	Total Emissions Benefits Projections (kg/day)			
	VOC	CO*	NO _x	PM _{2.5}
2018	0.730		3.733	1.314
2019	0.720		3.720	1.313
2020	0.711		3.709	1.313
2021	0.703		3.698	1.313
Sum '18-'19	1.450		7.453	2.627
Sum '18-'21	2.864		14.861	5.253

* No CO Target as DVRPC meets the NAAQS for this pollutant

NJTPA Forecasts and Targets

FY Year	Total Emissions Benefits Projections (kg/day)			
	VOC	CO*	NO _x	PM _{2.5} **
2018	7.121	16.085	50.960	0.840
2019	6.905	15.842	50.762	0.823
2020	6.725	15.631	50.595	0.809
2021	6.568	15.452	50.428	0.796
Sum '18-'19	14.026	31.927	101.722	1.663
Sum '18-'21	27.318	63.010	202.745	3.267

* Approximately 39.26% VMT in CO area, target factored accordingly

** 100% of PM_{2.5} benefit assumed to occur in non-attainment

area SJTPO Forecasts and Targets

FY Year	Total Emissions Benefits Projections (kg/day)			
	VOC	CO*	NO _x	PM _{2.5} *
2018	2.207		5.226	
2019	2.097		4.908	
2020	2.007		4.642	
2021	1.929		4.377	
Sum '18-'19	4.303		10.133	
Sum '18-'21	8.239		19.152	

* No CO or PM_{2.5} as SJTPO meets the NAAQS for these pollutants

Resulting Statewide Forecasts and Targets (Sum of MPOs)

Year	Total Emissions Benefits Projections (kg/day)			
	VOC	CO	NO _x	PM _{2.5}
2018	10.058	16.085	59.919	2.154
2019	9.721	15.842	59.390	2.137
2020	9.442	15.631	58.946	2.122
2021	9.200	15.452	58.504	2.108
Sum '18-'19	19.779	31.927	119.309	4.290
Sum '18-'21	38.421	63.010	236.758	8.520



CONGESTION MITIGATION AND AIR QUALITY MID PERFORMANCE PERIOD PROGRESS REPORT 2018 – 2019

South Jersey Transportation Planning Organization

Part of Philadelphia, PA—NJ—DE—MD Urbanized Area (UZA) and Atlantic City, NJ UZA

Background/Introduction:

Per the System Performance Rules, as laid out in 23 CFR 490.105(f)(6)(iii), if an MPO is a Transportation Management Agency (TMA) and if any part of a designated nonattainment and maintenance area within the metropolitan planning area overlaps the boundary of an urbanized area with a population more than 1 million in population, that MPO shall establish both 2-year and 4-year targets for their metropolitan planning area, and prepare a Congestion Mitigation Air Quality (CMAQ) Performance Plan (as specified in 23 CFR 490.107(c)(3)). Since a portion of the 8-Hour Ozone nonattainment area within the SJTPO metropolitan planning boundary overlaps with the Philadelphia, PA-NJ-DE-MD Urbanized Area (UZA), which has a population of approximately 5.4 million, it is subject to this requirement. While the SJTPO region also includes the Atlantic City, NJ Urbanized Area, with a population of approximately 248,000 (less than 1 million), it is not subject to reporting CMAQ congestion targets until the next 4-year performance period, starting in 2022.

The Federal Highway Administration (FHWA) finalized three performance measures for the purpose of carrying out the Congestion Mitigation and Air Quality (CMAQ) Program. There are two CMAQ Congestion measures and one CMAQ Emissions measure. The CMAQ Congestion measures are peak-hour excessive delay (PHED) and percent of Non-Single Occupant Vehicle (SOV) travel. The PHED measure is the annual hours of peak-hour excessive delay per capita that occurs within the applicable urbanized area (UZA). The percent of Non-SOV travel measure is the percentage of travel, in the UZA, conducted by means other than SOV. The CMAQ Emissions measure is the cumulative estimated emissions reductions for all CMAQ-funded projects obligated during the first two-year and four-year performance period for each applicable criteria pollutant.

Performance plans shall be updated biennially and include a separate report that assesses the progress of the program of projects under the previous plan in achieving the air quality and traffic congestion targets of the previous plan. MPOs submit the plan and its biennial updates to their respective State DOT for inclusion as an attachment to the State DOT Baseline, Mid, and Full Performance Period Reports, respectively.

The performance report must also include the cumulative emissions reductions for CMAQ-funded projects in the MPO's service area for federal fiscal years 2018 and 2019 as they are reported in the FHWA CMAQ Public Access System (PAS). Even though there were no SJTPO programmed CMAQ projects reported in the CMAQ Public Access System in FY 2018 and FY 2019, the SJTPO region was still able to meet or exceed the goals laid out in the Performance Plan. This was achieved through shared benefits of Statewide projects implemented by NJDOT and NJ TRANSIT. The goals set by SJTPO can be seen in Table 1 and the reported values in Table 2. These are then compared side by side in Table 3.

Moving forward SJTPO is working to implement more CMAQ funded projects in the region. In April of 2020 SJTPO released Notice of Funding Availability for the CMAQ program. The application period for SJTPO's competitive CMAQ Program was open from April 13th to August 5th, 2020. The goal is to provide funding opportunities for new transportation projects in Atlantic, Cape May, Cumberland, and Salem Counties. There will be approximately \$5.7 million available for CMAQ-eligible projects over three fiscal years (FY 2022, FY 2023, and FY 2024) that will further improve air quality and reduce traffic congestion in the region.

2-Year Condition/Performance:

2-year Condition/Performance for Traffic Congestion Measures:

The Philadelphia PA-NJ-DE-MD UZA exceeded expectations in meeting the Percent Non-SOV travel measure 2-year and 4-year targets set in 2018. The 2-year and 4-year targets were set at 28.0 percent and 28.1 percent, respectively. The Percent Non-SOV Travel measure was calculated for the interim performance period using the most recent U.S. Census ACS five-year estimates (2014-2018) with a result of 28.2 percent, exceeding the 2-year and 4-year targets.

Additionally, the UZA exceeded expectations in meeting the optional 2-year Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita target set in 2018 as well as the 4-year target of 17.2 annual hours per capita. The 2-year target was 17.0 and current measured value is 14.6, or a 2.4 decrease.

2-year Condition/Performance for On-Road Mobile Source Emissions Measures:

The SJTPO region exceeded the goals set for On-Road Mobile Source Emissions. The goals set in 2018 can be seen in Table 1. There were no SJTPO programmed CMAQ projects that were reported in the CMAQ Public Access System between fiscal years 2018 and 2019. However, benefits resulting from statewide projects sponsored by NJDOT and NJ TRANSIT are distributed to the MPOs, including SJTPO. The emission benefits from those statewide projects can be seen in Table 2. The 2-year and 4-year VOC goal has been exceeded by 6.17 kg/day and 2.24 kg/day, respectively. The 2-year and the 4-year NOx goals have been exceeded by 74.28 kg/day and 65.26 kg/day respectively.

Table 1: SJTPO Goals (includes 7.6% of Benefits From Statewide Projects)

FY Year	Total Emissions Benefits Projections (kg/day)			
	VOC	CO*	NOX	PM2.5*
2018	2.21		5.23	
2019				
2020	2.01		4.64	
2021	1.93		4.38	
Sum '18-'19	2.21	0.00	5.23	0.00
Sum '18-'21	6.14	0.00	14.25	0.00

* No CO or PM2.5 as SJTPO meets the NAAQS for these pollutants

**SJTPO anticipates completing backlog in FY2019 w/ no new projects



Table 2: SJTPO Progress to Date (includes 7.6% of Benefits From Statewide Projects)

FY Year	Total Emissions Benefits Projections (kg/day)			
	VOC	CO*	NOX	PM2.5*
2018	8.14		79.03	
2019	0.24		0.48	
2020				
2021				
Sum '18-'19	8.38	0.00	79.51	0.00
Sum '18-'21				

* No CO or PM2.5 as SJTPO meets the NAAQS for these pollutants

Table 3: Comparison of Targets to Reported Values

FY Year	Total Emissions Benefits Projections (kg/day)							
	VOC		CO*		NOX		PM2.5*	
	Target	Reported	Target	Reported	Target	Reported	Target	Reported
2018	2.21	8.14	-	-	5.23	79.03	-	-
2019	0.00	0.24	-	-	0.00	0.48	-	-
Sum '18-'19	2.21	8.38	-	-	5.23	79.51	-	-
Sum '18-'21	6.14		-	-	14.25		-	-

* No CO or PM2.5 as SJTPO meets the NAAQS for these pollutants

Adjusted 4-year Targets:

In coordination with the Philadelphia PA-NJ-DE-MD Urbanized Area Transportation PM3 Measures Coordination Committee, NJDOT, and the Complete Team (a group of transportation planning and operations professionals convened by NJDOT that meets quarterly) it was decided not to adjust the 4-year targets for Traffic Congestion Measures or On-Road Mobile Source Emissions. This was partially due to the fact that the goals had been met and the uncertainties associated with how COVID-19 will impact the region over in terms of commuter behaviors over the remaining reporting period.

Description of Projects:

According to FHWA Guidance for preparing the MPO CMAQ performance report, MPOs must present a description of projects identified for funding during the performance period (Federal Fiscal Years 2018-2019, and 2018-2021). Included with the project descriptions should be a further description of how the projects will help the MPO meet the two- and four-year targets for traffic congestion and on-road mobile source emissions.

The project descriptions below were last updated with the release of SJTPO’s RTP 2050 in June 2020. Since this update two additional CMAQ projects have been programmed for the SJTPO region for FY 2020 authorization. This includes the Cumberland County Intersection Improvements (Bridgeton Traffic Signals) project and the Pacific Avenue (CR 621), Fish Dock Road to Rambler Road project. More details on these projects along with all the other programmed CMAQ projects can be found in the tables below. As stated, the 2-year and 4-year targets have already been achieved. However, the local and statewide projects outlined below will continue to contribute to the 4-year targets during the remaining 2 years of the CMAQ Performance Plan.

State Project ID	TIP Program Year (FY)	Project Type	Project Title	Additional Project Description	Emissions Benefit (Q/A)	Traffic Congestion Benefit? (PHED)	Traffic Congestion Benefit? (Non-SOV)	New (N) or Continuing (C) Project?	STATUS FY 2020
3.1. Local CMAQ Projects not yet reported in CMAQ Public Access database									
X065	2018	Traffic Operations	Roosevelt Blvd./34th Street Advanced Traffic Signal Project	Construction and interconnection of advanced system equipment at seven signalized intersections along Cape May County CR 623.	Yes— improved operations, less idling	Yes	No	N	Resubmitted for FY 2022-2024 Solicitation Period
X065	2018	Transit	Purchase of Eight (8) Replacement Paratransit Passenger Buses (flex to NJ Transit)	Replacement of older vehicles with cleaner diesel powered buses and low emission unleaded fueled mini-buses	Yes, cleaner vehicles and fuels	Possibly, removing SOV's off road.	Yes	N	Moved to FY 2021
X065	2018	Transit	Procurement of 7 low emission, unleaded fuel, body on chassis mini-buses (flex to NJ Transit)	This project consists of the procurement of 7 low emission, unleaded fueled, body on chassis mini-buses with a fourteen passenger seating capacity and two wheel chair securement locations. These newly purchased vehicles would replace older models of a similar nature which have reached or will reach the end of their useful life	Yes, cleaner vehicles	Possibly, removing SOV's off road.	Yes	N	Moved to FY 2021
X065	2018	Alternative Fuel	It Pay\$ to Plug In: New Jersey's Electric Vehicle Charging Grants Program	The project would expand the New Jersey Department of Environmental Protection's (NJDEP) successful electric vehicle (EV) charging grants program, It Pay\$ to Plug In, to fund strategic deployment of EV charging stations throughout the SJTPO region.	Yes, cleaner vehicles	No	No	N	Moved to FY 2021
X065	2018	Traffic Operations	Landis & Mill, Landis & Orchard Traffic Signal Upgrades	The proposed project is to design and construct traffic signal improvements at the intersections of Landis Avenue & Mill Road, and Landis Avenue & Orchard Road. These two intersections provide an important connection between the interchange of Landis Ave and Route 55, Delsea Drive (Route 47), and downtown Vineland. This project is a continuation of two prior CMAQ projects on Landis Avenue: In FY 2015, Landis Avenue Signal Upgrades Phase I was funded to upgrade seven signals from The Boulevards to Myrtle Street. In FY 2016, Landis Avenue Signal Upgrades Phase II was funded to upgrade four signals from West Ave to 4th St.	Yes— improved operations, less idling	Yes	No	N	Moved to FY 2021
X065	2020	Traffic Operations	Cumberland County Intersection Improvements (Bridgeton Traffic Signals)	The project will consist of the replacement and upgrading of two existing traffic signals to current standards. The specific emissions reductions will be primarily due to the following: - Upgraded signals will be actuated using video detection technology which will significantly reduce delay and its associated emissions. - Upgraded signals will have existing timings reviewed during design phase and appropriate changes made (if possible) to further reduce delay and associated emissions. - Upgraded signals will include pedestrian actuation and dedicated pedestrian signals which will promote additional pedestrian activity within the adjacent urban environment.	Yes— improved operations, less idling	Yes	No	N	FY 2020 authorization
S1711	2020	Bike/ Pedestrian Improvement	Pacific Avenue (CR 621), Fish Dock Road to Rambler Road	This project will add dedicated bike lanes that will facilitate a means of travel to various employment centers and upgrades five signal	Yes – less idling and fewer vehicle trips	Yes	Yes	N	FY 2020 authorization



State Project ID	TIP Program Year (FY)	Project Type	Project Title	Additional Project Description	Emissions Benefit (Q/A)	Traffic Congestion Benefit? (PHED)	Traffic Congestion Benefit? (Non-SOV)	New (N) or Continuing (C) Project?	STATUS FY 2020
3.2 Statewide CMAQ Projects									
13303	FY 2018-21	ITS	Active Traffic Management System	This program will provide funding for the deployment program for the first Active Traffic Management System (ATMS) in the State including all phases of design. This program will include funding for the complete delivery of the Final Design document for Active Traffic Management System (ATMS) for a candidate highway (I-80, I-295 or I-78). The design document will be used to deploy and carry out the actual construction of this technology for automatic operation and handling of traffic.	Yes— improved operations, less idling	Yes— improved operations.	No	N	Ongoing.
X185	FY 2018-21	Bike/ Pedestrian Improvements	Bicycle & Pedestrian Facilities/ Accommodations	This is a comprehensive program to insure the broad implementation of the Statewide Bicycle and Pedestrian Master Plan, Complete Streets Policy and the implementation of federal and state policies and procedures pertaining to bicycle, pedestrian, transit and ADA access and safety. This program includes addressing bicycle, pedestrian, transit and ADA travel needs through the development of improvements on state, county and local system either by independent capital projects or through grants to counties and municipalities. Projects must make full consideration for the needs of all users.	Yes.	Yes, reduces vehicles on road	Yes.	N	Mostly on schedule; Statewide Bicycle and Pedestrian Master Plan behind schedule.
15343	FY 2018-21	ITS	Intelligent Traffic Signal Systems	This program will seek to improve mobility on New Jersey’s arterial highways. Arterials contribute almost 70% of total congestion that occurs in New Jersey. This program will focus on dynamically managing NJ’s arterials from NJDOT’s Arterial Management Center. Existing traffic signals will be strategically, systematically and programmatically upgraded from standalone signals to highly sophisticated, coordinated, real time traffic response traffic signals. This upgrade will consist of installing new controllers, intelligent software and algorithms, robust detection and communication. This is a plan to upgrade most of the signals on NJDOT owned highways only.	Yes— improved operations, less idling	Yes— improved operations	No	N	Ongoing.
X43	FY 2018-21	Transit	Transportation Demand Management Program Support	This funding is utilized to continue the management of the Owned and Leased Park and Ride Program and the remaining efforts as they relate to the 1-800-CARPOOL program which also includes maintaining the RidePro ride matching software program.	Yes – Improved operations	Yes – reduces SOVs	Yes	C	Still in operation. In FY 20 STIP as DB X28B
T112	FY 2018-21	Transit	Rail Rolling Stock Procurement	This program provides funds for the replacement of rail rolling stock, including engineering assistance and project management, to replace over-aged equipment including rail cars, revenue service locomotives, and expansion of NJ TRANSIT rolling stock fleet (cars and locomotives) to accommodate projected ridership growth and other system enhancements over the next ten years. Funding is provided to support vehicles/equipment (for rail operations). Annual funds are provided for Comet V single-level car lease payments, Electric Locomotive lease payments, Diesel Locomotive lease payments, Dual Power Locomotives and Multi-Level rail car lease payments and other upcoming rolling stock lease payments. Pay-as-you-go funding is also programmed for Multi-Level vehicles and other rolling stock. CMAQ: Funding for Rail Rolling Stock Procurement will include CMAQ funds. Rail Rolling Stock Procurement is CMAQ eligible because it meets federal eligibility requirements. The project will provide funding for the purchase of Multi- Level Coaches and Multi-Level EMU vehicles. For the CMAQ justification see "CMAQ Report for NJ TRANSIT". This project is funded under the provisions of Section 13 of P.L. 1995, c.108.	Supporting rail transit operations reduces emissions by reducing SOV travel.	Maintaining transit vehicles and supporting transit operations reduce congestion.	Maintaining transit vehicles and supporting transit operations reduce SOV travel.	C	Funded for FY 2020; expected to be used FY 2020.

Assessment of Progress Towards Achieving the 2-year Targets:

As described above, SJTPO has achieved its 2-year and 4-year targets. The seven local led SJTPO CMAQ programed projects outlined in Table 3.1 and the five state led projects outlined in Table 3.2 have been updated since the 2018 CMAQ Performance Plan was adopted. The changes include two new local projects scheduled for FY 2020 authorization that will contribute to a reduction in PHED and fewer SOVs. Other changes are primarily related to delays in project development.