DRAFT

Baltimore Regional Transportation Board CMAQ Performance Plan

To be submitted with the Maryland DOT Baseline Performance Period Report – October 1, 2018

MPO Name:	TMA and State(s):
Baltimore Metropolitan Council	*Baltimore, MD*

Background

This report documents the CMAQ Performance Plan for the Baltimore Regional Transportation Board, as required though federal regulation. CMAQ is the Congestion Mitigation and Air Quality Improvement Program federal funding category.

The BRTB is the federally designated metropolitan planning organization for the Baltimore region. *23 CFR 490.107(c) and 23 USC 149(l)* require an MPO to develop a CMAQ Performance Plan, to be submitted as an attachment to the State DOT biennial performance reports for the Baseline, Mid Period and Full-Period of each 4-year performance period. In fall 2018, the Maryland DOT is required to submit their Baseline Performance Period Report. The BRTB requests that this report, when final, be attached to the Baseline Performance Period Report.

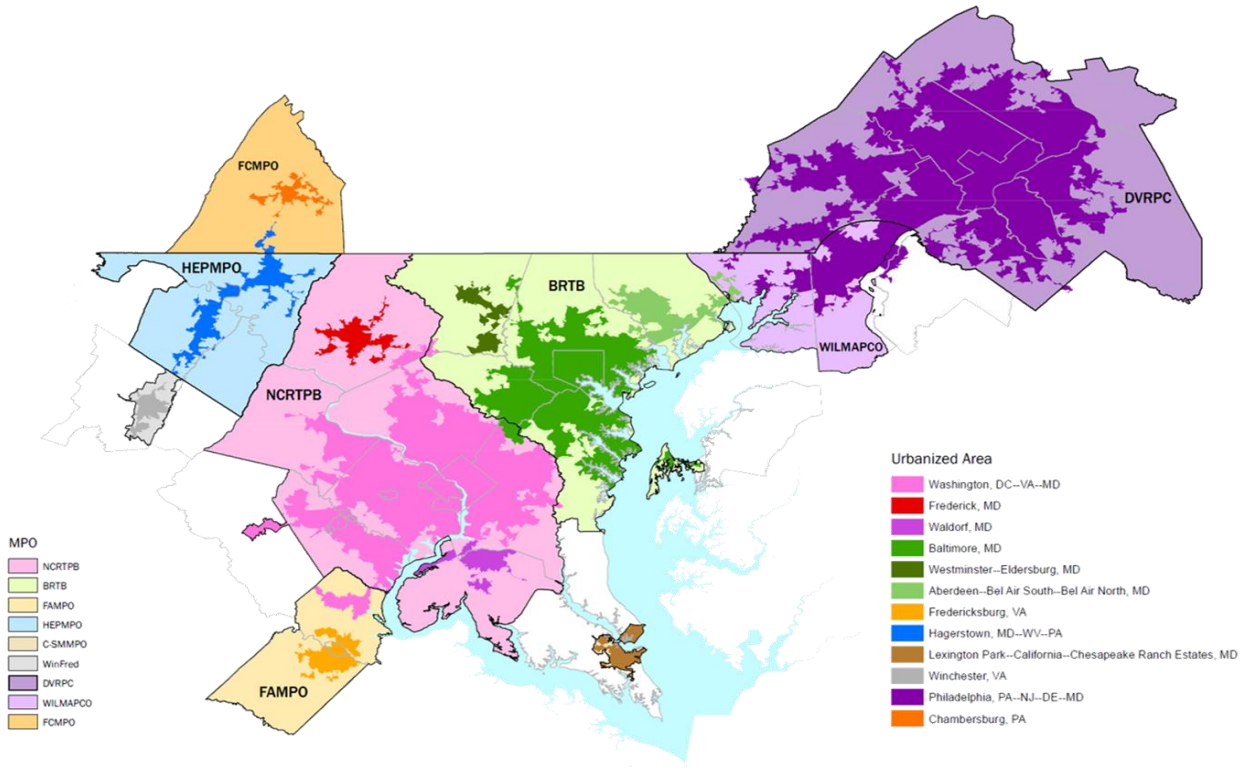
The Baltimore region is designated a “marginal” nonattainment area for the 2015 8-hour ozone standard, a “moderate” nonattainment area for the 2008 ozone standard, and a “serious” nonattainment area for the 1997 ozone standard. The newest 2015 ozone standard is 0.070 parts per million (ppm), which is the strictest of the three above.

The following report describes the baseline condition and MPO performance targets for three CMAQ-related performance measures:

- Peak hour excessive delay (PHED)
- Percent non-single occupancy vehicle (SOV) travel, and
- On-road mobile source emissions reductions from CMAQ-funded projects

The geographic area covered by the PHED and Non-SOV travel performance measures include the Baltimore urbanized area, shown in Figure 1. For the on-road mobile source emissions reduction measure, the area covered is the BRTB MPO planning area.

Figure 1. MPO Boundaries and Urbanized Areas in Maryland



Baseline Condition

At this time, the BRTB is required to report the baseline condition for two traffic congestion measures, covering the Baltimore Urbanized Area, and one on-road mobile source emissions measure, covering the BRTB MPO planning area. Baseline conditions and the methodology for how they were developed are provided below.

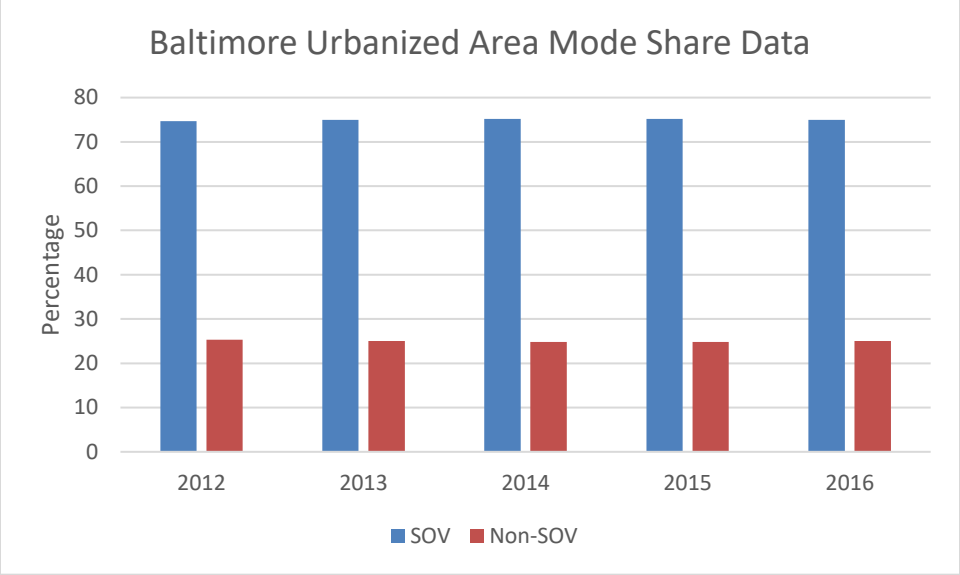
Baseline Condition for Traffic Congestion Measures:

Maryland Department of Transportation (MDOT), along with the BRTB and the National Capital Region Transportation Planning Board (TPB), worked together to develop baseline conditions and targets for both traffic congestion measures. Initially, the requirement to develop and report these targets applies to urbanized areas of more than 1 million people that are also in nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter. States and MPOs with NHS mileage within an applicable urbanized area must coordinate on a single, unified target. These performance measure targets for the Baltimore urbanized area were developed by the May 20, 2018 deadline. They were approved by the BRTB through resolution at their May 22, 2018 meeting.

The PHED measure is the annual hours of peak hour excessive delay per capita that occurs within an applicable urbanized area on the National Highway System. The PHED baseline level was determined by uploading posted speed limit data on segments of the NHS in the Baltimore urbanized area into a tool within the RITIS

program. RITIS is the Regional Integrated Transportation Information System. It is a data-driven platform for transportation analysis, monitoring, and data visualization. For more information on RITIS, visit www.ritis.org. PHED was determined by adding together excessive delay experienced by highway users an all reporting segments during peak hours (3-7PM). Excessive delay is a vehicle on the NHS going at a speed of 20 miles per hour (mph) or 60% of the posted speed limit, whichever is greater. Peak Hour Excessive Delay for the Baltimore urbanized area was calculated as **20.2 hours** in calendar year 2017.

The Percent of Non-SOV Travel measure is the percentage of Non-SOV vehicles traveling within an applicable urbanized area. U.S. Census/American Community Survey (ACS) 5-year data was used to calculate percent non-SOV travel and targets. Percent non-SOV travel since 2012 has remained steady at around 25%. Non-SOV travel percentage in 2017 was **24.85**%.



Baseline Condition for On-Road Mobile Source Emissions Measures:

Every year, the Maryland Department of Transportation (MDOT) submits a report to FHWA that includes CMAQ project information and emissions benefits. These reports are made available through the FHWA Public Access System (PAS). The PAS, which can be accessed at (https://fhwaapps.fhwa.dot.gov/cmaq_pub/), was used by the MPO to establish baseline emission reductions provided by CMAQ-funded projects in the Baltimore region. For this measure, the BRTB summed 2- and 4-year totals of emission reductions of NOx and VOCs from CMAQ-funded projects (in kilograms per day) that were reported in the PAS between Federal fiscal years 2014 to 2017. CMAQ Emission Reductions for VOC between 2014 and 2017 were **6.19 kg/day**, and for NOx were **83.23 kg/day**.

FY Year	Sum of Emissions Benefits (kg/Day)	
	VOC	NOX
2014	0.17	0.32
2015	2.02	39.61
2016	0.22	0.28
2017	3.78	43.03
Total (2014-2017)	**6.19**	**83.23**

2-year and 4-year Targets

Targets for Traffic Congestion Measures:

The following targets were developed for the two traffic congestion measures, for the Baltimore urbanized area. These targets are identical to the State DOT(s) targets for the metropolitan area. A two-year target for PHED was not required, but is listed in the table.

For PHED, the targets were developed by using the existing PHED, calculated through the RITIS tool, and then projecting future delay. The increasing targets reflect the fact that delay will likely increase into the near future, despite work the MPO is planning to address it.

For Percent non-SOV travel, MDOT has set a 2- and 4-year target of 24.85%, aligning with the average level over the past five years. The BRTB has approved a resolution to adopt this target for the Baltimore region.

	Peak Hour Excessive Delay (PHED), hours	Percent Non-SOV
2-year Target	<21.8 (not required)	24.85%
4-Year Target	<22.6	24.85%

Targets for On-Road Mobile Source Emissions Measures:

MPOs with a population more than 1 million and with designated nonattainment and maintenance areas must develop both 2-year and 4-year quantifiable targets. The Baltimore region has a population of greater than 1 million, and is nonattainment for the ground-level ozone National Ambient Air Quality Standard (NAAQS).

The following targets were developed to address the on-road mobile source emissions measure for the Baltimore region. These targets were developed by MDOT as part of their overall state emission reduction target. The BRTB approved a resolution in June 2018 to adopt the MDOT-developed targets for the Baltimore region.

	Reduction of VOC (kg/day)	Reduction of NOx (kg/day)
2-year Target (2018-2019)	6.589	88.571
4-Year Target (2018-2021)	7.874	123.390

These targets were calculated using a combination of two approaches, based upon the MDOT modal administration, carrying out the projects. For MTA projects, which consist mainly of transit bus replacements, programmed transit bus replacements for FY 2018 through FY 2021 were calculated. For SHA projects, an average emission reduction resulting from SHA projects in 2014 through 2017 was calculated and projected into years 2018 through 2021. Each year, the average was corrected for the average fleet vehicle having lower emission rates. MDOT and their consultant developed the appropriate calculations; the BRTB staff worked with MDOT and SHA staff throughout the process, and received information about the assumptions and methodology of calculation. Both the MAQONE model and the CMAQ online emission reduction calculator were used to assess the benefits of different projects.

Description of Projects

This CMAQ Performance Plan is required to include a description of the projects identified for CMAQ funding and how these projects will contribute to the achievement of the 2- and 4-year targets for traffic congestion and on-road mobile source emissions. The applicable emissions for the BRTB region include ozone precursors, volatile organic compounds (VOCs) and nitrogen oxides (NOx). The attached table describes the projects to be funded with the CMAQ program in the next four years.

Description of Projects to be Funded with CMAQ in the Baltimore Region (FY 2018 to FY 2021)

DOT	Project Category	Description of Project	Applicable Pollutant	Year Anticipated for CMAQ Obligation	NOx Benefit (kg/day)	VOC Benefit (kg/day)	Traffic Congestion Benefit PHED	Traffic Congestion Benefit Non-SOV
MDOT	Transit Improvements	MTA Bus Replacements	Ozone	2018	50.162	5.098	-	-
MDOT	Transit Improvements	MTA Bus Replacements	Ozone	2019	22.091	0.309	-	-
MDOT	Transit Improvements	MTA Bus Replacements	Ozone	2020	11.046	0.154	-	-
MDOT	Transit Improvements	MTA Bus Replacements	Ozone	2021	10.730	0.150	-	-
MDOT	Congestion Management	Future SHA CMAQ projects are not yet programmed and are subject to change. Typical SHA CMAQ projects in the BRTB planning area include Traffic Flow Improvement projects, Pedestrian and Bicycle Facilities, and Park-and-Ride Lots.	Ozone	2018	8.657	0.621	-	-
MDOT	Congestion Management	Future SHA CMAQ projects are not yet programmed and are subject to change. Typical SHA CMAQ projects in the BRTB planning area include Traffic Flow Improvement projects, Pedestrian and Bicycle Facilities, and Park-and-Ride Lots.	Ozone	2019	7.660	0.561	-	-
MDOT	Congestion Management	Future SHA CMAQ projects are not yet programmed and are subject to change. Typical SHA CMAQ projects in the BRTB planning area include Traffic Flow Improvement projects, Pedestrian and Bicycle Facilities, and Park-and-Ride Lots.	Ozone	2020	6.800	0.505	-	-

MDOT	Congestion Management	Future SHA CMAQ projects are not yet programmed and are subject to change. Typical SHA CMAQ projects in the BRTB planning area include Traffic Flow Improvement projects, Pedestrian and Bicycle Facilities, and Park-and-Ride Lots.	Ozone	2021	6.243	0.475	-	-