

MPO CONGESTION MITIGATION AND AIR QUALITY PROGRAM PERFORMANCE PLAN

Baseline Performance Period Report
for the 2022-2025 Performance Period

September 2022



National Capital Region
Transportation Planning Board

MPO CONGESTION MITIGATION AND AIR QUALITY PROGRAM PERFORMANCE PLAN

September 28, 2022

ABOUT THE TPB

The National Capital Region Transportation Planning Board (TPB) is the federally designated metropolitan planning organization (MPO) for metropolitan Washington. It is responsible for developing and carrying out a continuing, cooperative, and comprehensive transportation planning process in the metropolitan area. Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia and the District of Columbia, 24 local governments, the Washington Metropolitan Area Transit Authority, the Maryland and Virginia General Assemblies, and nonvoting members from the Metropolitan Washington Airports Authority and federal agencies. The TPB is staffed by the Department of Transportation Planning at the Metropolitan Washington Council of Governments (COG).

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MPO CMAQ PROGRAM PERFORMANCE PLAN

This report summarizes the federal requirements for the National Capital Region Transportation Planning Board (TPB), the Metropolitan Planning Organization (MPO) for the metropolitan Washington, DC area, for the development of a MPO Congestion Mitigation and Air Quality Program (CMAQ) Performance Plan as required under federal metropolitan planning regulations for Performance Based Planning and Programming (PBPP). The TPB’s MPO CMAQ performance plan includes a description of conditions and performance, the performance measure targets associated with the CMAQ Program, and a description of completed and anticipated CMAQ projects for the period of the plan for the TPB metropolitan planning area.

This CMAQ performance plan is the baseline period performance plan for the 2022-2025 period. This plan will be submitted by the three state departments of transportation (DOTs) for the region, the District of Columbia, Maryland and Virginia DOTs, as part of their baseline period reports due by October 1, 2022.

The TPB’s CMAQ performance plan performance measure targets include unified Washington, DC-MD-VA urbanized area targets for the performance measures of Peak Hour Excessive Delay (PHED) and Mode Share (Non-SOV Travel) in the area of traffic congestion. In addition, the TPB’s metropolitan planning area includes a large Transportation Management Area and therefore performance targets for Emissions Reduction from CMAQ funded projects for applicable pollutants and precursors are set for the portion of the Washington, DC-MD-VA eight-hour zone nonattainment area within the TPB planning area boundary.

BACKGROUND

The Federal Highway Administration (FHWA) published 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* final rule on January 18, 2017, with an effective date of May 20, 2017. The state departments of transportation (DOTs) then had one year until May 20, 2018 to set their initial targets. The rule requires states to set targets for three performance measures concerning Highway and Freight: 1) Interstate Travel Time Reliability (TTR), 2) National Highway System (NHS) TTR, and 3) Freight Reliability (Truck Travel Time Reliability (TTTR) Index). In addition, the FHWA requires states to set three performance measures concerning CMAQ: 1) Peak Hour Excessive Delay (PHED), 2) Mode Share, and 3) Emissions Reduction – see Table 1.

Table 1: Summary of CMAQ Program Performance Measures

	Performance Measures
CMAQ Program: Traffic Congestion	Peak Hour Excessive Delay – Annual hours of peak hour excessive delay per capita
	Mode Share – Percent of Non-SOV Travel on the NHS
CMAQ Program: Emissions Reduction	Emissions – CMAQ-funded projects on-road mobile source total emissions reduction for each applicable criteria pollutant and precursor

MPOs are required to establish their performance targets in coordination with their state partners and these targets should be data-driven and realistic. The requirement for these targets to be evidence based and predictive of anticipated outcomes does not supersede or diminish any aspirational targets to which local, regional, or state jurisdictions are committed. Coordination is essential between the MPO and state DOTs in developing the CMAQ Program targets, particularly in the National Capital Region for which the DOTs (in Virginia, with the Northern Virginia Transportation Authority) select CMAQ Program projects. Agencies work together to share data, review strategies, and understand outcomes.

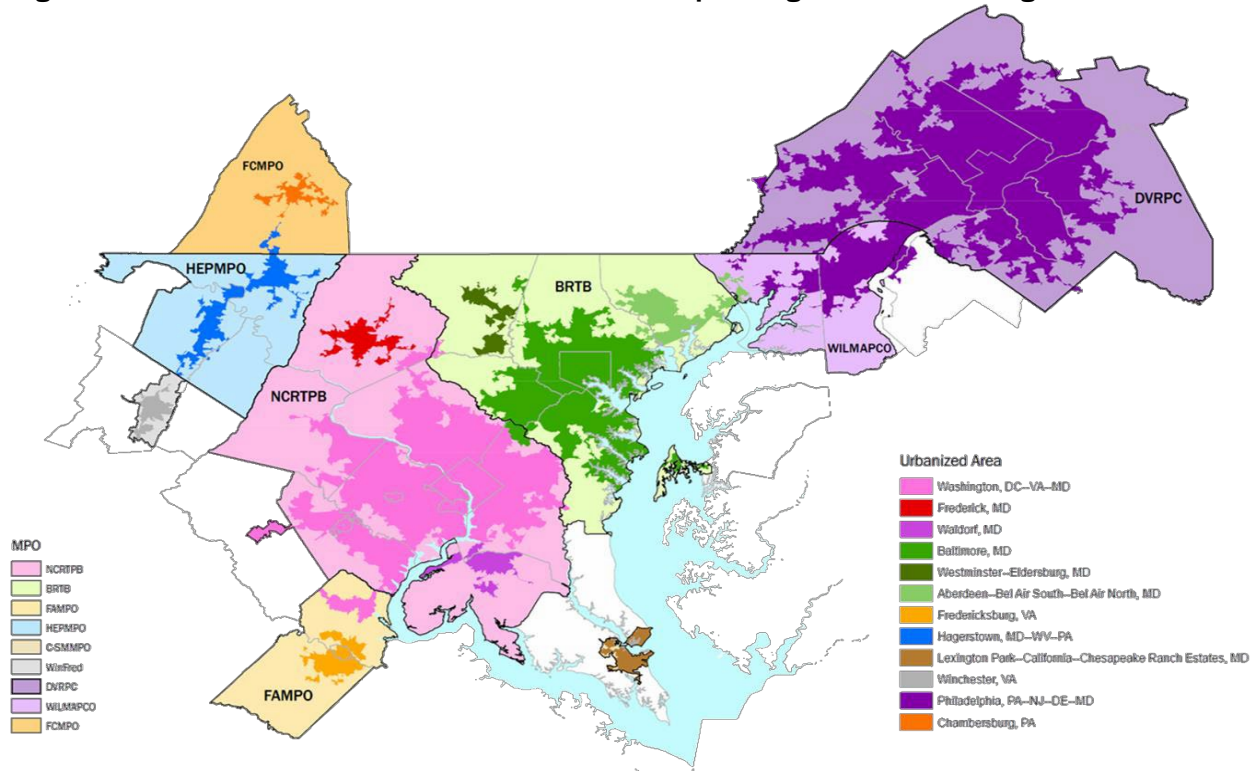
After the state DOTs establish 2-year and 4-year targets, MPOs may either support the State target or establish their own quantifiable targets within 180 days. MPOs with a population more than 1 million and with designated nonattainment and maintenance areas are required to develop both two-year and four-year quantifiable targets. Otherwise, only four-year targets are required. In addition, per statute 23 USC 134 (h)(2) MPOs serving a large Transportation Management Area (TMA) must develop a CMAQ performance plan as required under 23 CFR 490.107(c) and 23 USC 149(l). In the CMAQ performance plan and its biennial updates, these MPOs report 2 and 4-year targets, describe how they plan to meet their targets, and detail their progress toward achieving the targets over the course of the performance period. The TPB has established 2-year and 4-year CMAQ Program targets and prepared CMAQ performance as plans as required.

The first PBPP performance period was for the years 2018 to 2021: calendar year for the CMAQ Traffic Congestion measures (PHED and Mode Share) and federal fiscal year for the CMAQ Emissions Reduction measure. Targets for this period were set in 2018 and the TPB's initial MPO CMAQ Performance Plan was attached to the three state DOTs' biennial performance reports for the baseline performance period, submitted by October 1, 2018, followed by a mid performance period report submitted by October 1, 2020 and the full performance period report, due by October 1, 2022.

This baseline performance report describes the TPB's 2-year and 4-year CMAQ Program targets established for the 2022-2025 quadrennial performance period, and will be submitted by the three state DOTs by October 1, 2022 as part of the federally-required baseline period reports.

The planning area for the TPB and its relationship with the Washington DC-MD-VA urbanized area as well as nearby MPOs and other urbanized areas is shown in Figure 1.

Figure 1: The MPO and UZA Boundaries for the National Capital Region and Surrounding Area



CMAQ MEASURES, TARGETS, AND REQUIREMENTS

Peak Hour Excessive Delay (PHED)

Applicable state DOTs and MPOs collectively established a single PHED target for each applicable urbanized area. After the state DOTs establish their PHED targets, MPOs have 180 days to adopt a target. However, it should be emphasized that PHED target for an applicable urbanized area must be unified, with all state DOTs and MPOs intersecting with the urbanized area coordinating and exchanging information in the development of a single, unified target.

TPB staff coordinated with the three state DOTs and with the Fredericksburg Area MPO (FAMPO) and the Baltimore Regional Transportation Board (BRTB) to develop and adopt single, unified two-year and four-year PHED targets for the Washington, DC-MD-VA urbanized area.

Mode Share (Non-SOV Travel)

Applicable state DOTs and MPOs are required to collectively establish a single, unified two-year and four-year mode share target for each applicable urbanized area. Similar to the PHED target, the Mode Share target for the applicable urbanized area must be unified, and both DOTs and MPOs should coordinate and exchange information with the development of these targets.

TPB staff coordinated with the three state DOTs and with FAMPO and BRTB to develop and adopt a single, unified Mode Share target for the Washington, DC-MD-VA urbanized area.

The FHWA has provided three data collection models as a means of estimating the required performance targets. Model A allows use of the U. S. Census Bureau's American Community Survey (ACS) data found in the table titled "Journey to Work." Model B allows for data collected from localized surveys. Model C involves estimating the percent of non-SOV based on volume measurements of actual use for each mode of transportation, including telework. For purposes of this region's measure, Model A was utilized.

Emissions Reduction

State DOTs, with coordination from the MPO, must establish statewide two and four-year targets for total emissions reduction of on-road mobile source emissions for each performance period for all nonattainment and maintenance areas within their state's boundary, for each applicable criteria pollutant and precursor. MPOs, in coordination with state DOTs, must establish two and four-year targets for all nonattainment and maintenance areas within the metropolitan planning area. Targets are to be set within 180 days after state DOTs have set their targets. In both cases, the targets are required to reflect the anticipated cumulative emissions reductions to be reported by state DOTs in the CMAQ Public Access System for CMAQ projects included in the Statewide Transportation Improvement Program (STIP).

TPB staff coordinated with the three state DOTs to develop and adopt Emissions Reduction 2-year and 4-year targets for the applicable pollutants/precursors of Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NOx) for the Washington, DC TMA.

2022-2025 BASELINE PERIOD

In developing targets for the three CMAQ performance measures for the 2022-2025 baseline period CMAQ Plan, TPB staff coordinated with the three state DOTs on forecasting methodologies for projecting future performance. Targets were developed and set based on the projected performance.

TPB staff worked in close coordination with the three state DOTs in the development of these performance targets. The TPB, the state DOTs and adjacent MPOs (BRTB and FAMPO) have signed Letters of Agreement (LOAs) which detail the guidelines and expectations in terms of coordination on data sharing and the development of these targets. This is in accordance with 23 CFR 450.208 which sets forth the requirements for coordination between applicable states and MPOs.

PHED AND MODE SHARE TARGETS

As part of the process for the target setting of the PHED and Mode Share performance measures, in 2018 TPB staff developed a forecasting methodology that averaged the effects of the travel demand model output and the extrapolation of past performance. For forecasting for the 2022-2025 four-year performance period, TPB staff decided to use methodologies similar to that for the previous performance period. The PHED measure was forecast using the average of the trendline and an indicator output from the near-term years of the Travel Demand Model for both two-year and four-year targets. The Mode Share (Non-SOV) measure was forecast using only the trendline.

These targets apply to the Washington, DC-MD-VA urbanized area and required agreement on a single common target among the three State DOTs and three MPOs. The targets were adopted by the TPB on June 15, 2022 (see Resolution R19-2022 at end) and are shown in Table 2 below.

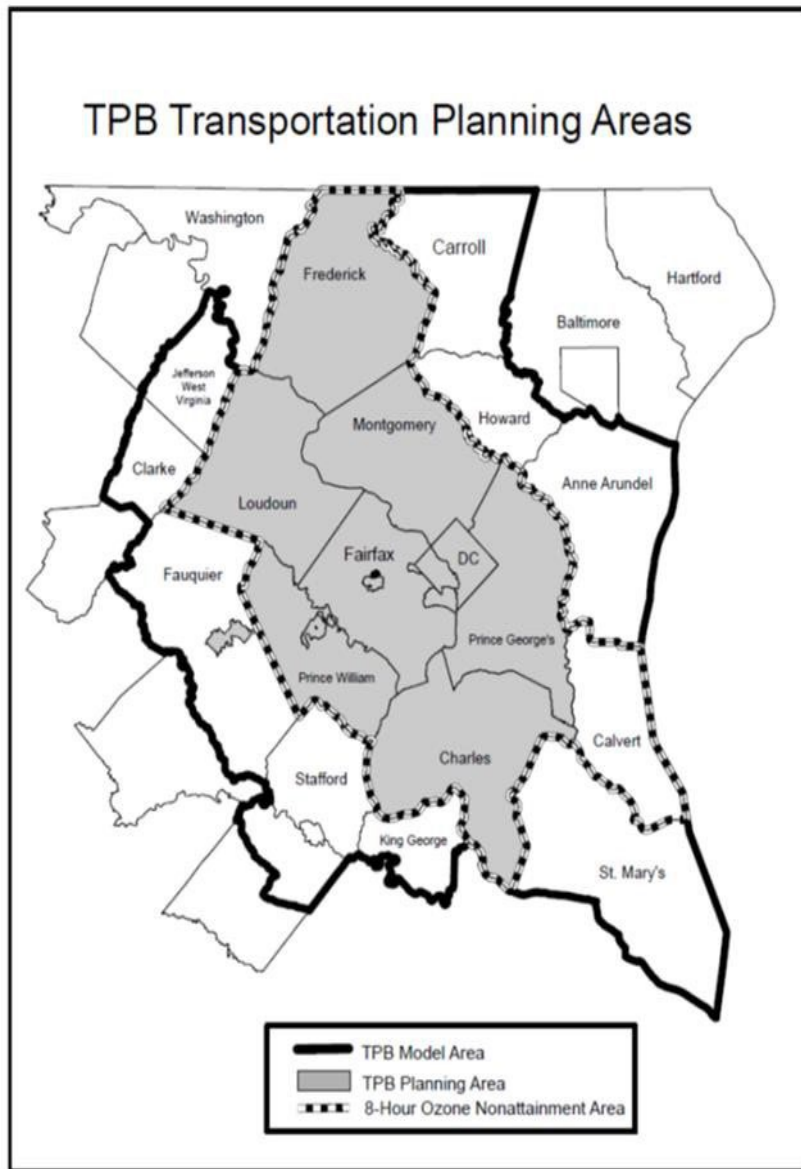
Table 2: 2022-2025 CMAQ Program Traffic Congestion Regional Targets: Mode Share and PHED

Performance Measure for the Washington DC-MD-VA Urbanized Area	2-year Target 2022 - 2023	4-year Target 2022 - 2025
Peak Hour Excessive Delay (PHED) – Annual hours of peak hour excessive delay per capita	22.5 Hours	22.7 Hours
Mode Share - Percent of Non-SOV Travel on the National Highway System (NHS)	37.4%	37.7%

EMISSIONS REDUCTION

Emissions reduction is defined as the total on-road mobile source emission reductions for each applicable criteria pollutant and precursor for a nonattainment area. For the eight-hour ozone nonattainment area in the TPB region, shown in Figure 4, the applicable criteria pollutants are Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NOx). This performance measure applies to projects that receive or are programmed for CMAQ funding. Data were collected from the CMAQ Public Access System, as specified in the federal rulemaking. State DOTs report emissions reductions information in the Public Access System for CMAQ funded projects in their Statewide Transportation Improvement Program (STIP).

Figure 2: Map of the TPB Ozone Nonattainment Area



It should be noted that the regional eight-hour ozone nonattainment area includes Calvert County; however, this county is not part of the TPB planning area, as shown in Figure 2. Maryland DOT and Calvert County conduct a separate performance measure analysis for emissions reduction for that portion of the nonattainment area.

CMAQ PROJECT EMISSIONS REDUCTIONS

The Washington DC-MD-VA eight-hour ozone nonattainment area is shared by the District of Columbia, Maryland, and Virginia with unique internal processes for selection and programming of CMAQ projects. Each of these states also have different methodologies for the establishment of their state Emissions Reduction targets.

In forecasting emissions reduction in 2018 for the first PBPP performance period, several methodologies were considered by TPB staff, with the selected methodology being the summation of the projected emissions reductions from CMAQ projects. Based on the available quantified data and the information provided by the three DOTs, the TPB summed the forecast emissions reduction benefits forecast by each state for CMAQ projects planned in the region. The combined emissions reductions were then used to set the two-year and four-year targets for the two applicable pollutants.

For forecasting for the 2022-2025 four-year performance period, TPB staff used a methodology consistent with that for the previous performance period, working with the state DOTs to collect their predicted emissions from programmed or likely CMAQ funded projects. The Maryland and Virginia DOTs were able to provide planned CMAQ-funded projects. The District DOT did not identify specific projects as they were still in the selection phase during the development of the targets; accordingly, an average of emissions reductions achieved from their past four years projects was extrapolated for DC. The regional targets for VOCs and NOx were adopted by the TPB on June 15, 2022 (see Resolution R19-2022 at end) and are presented in Table 3.

Table 3: 2022-2025 CMAQ Program Regional Targets: On-Road Mobile Emissions Reductions

Total Emissions Reductions for the TPB portion of the Washington DC-MD-VA nonattainment area	2-year Target FFY 2022 – 2023	4-year Target FFY 2022 – 2025
Volatile Organic Compounds (VOCs)	0.610 Kg/Day	9.408 Kg/Day
Nitrogen Oxides (NOx)	2.830 Kg/Day	21.117 Kg/Day

APPENDIX

The CMAQ Performance Plan must include a description of the projects identified for CMAQ funding and how these particular projects will aid in the achievement of the set targets concerning traffic congestion and emissions reduction. On the following pages, Table A-1, illustrates the CMAQ projects projected to be completed within the next four years for Maryland and Virginia. With the completion of these listed projects, **all provided by the state DOTs**, the established targets will be achieved. Table A-1 provides a description of the project, the anticipated year of CMAQ obligation, the benefits by pollutant and precursors, as well as the traffic congestion benefits. Those cells within Table A-1 that are blank represent information that is not available.

For the 2022-2025 period, the following CMAQ project list has been provided.

Table A-1: Description of CMAQ Projects

DOT	Project Title	Year Anticipated for CMAQ Obligation	NOx Benefit (kg/day)	VOC Benefit (kg/day)
VDOT	VRE WOODBRIDGE PLATFORM IMPROVEMENTS - New Continuation	2022	0.046	0.007
VDOT	VRE MANASSAS PARK STATION SECOND PLATFORM - New Project	2022	0.541	0.086
VDOT	PRINCE WILLIAM PARKWAY SIDEWALK - New Project	2023	0.025	0.029
VDOT	HERNDON METRORAIL INTERMODAL ACCESS IMPROVEMENTS PH II - New Project	2023	0.000	0.201
VDOT	JOHN MARSHALL HIGHWAY (RTE. 55) SIDEWALK - New Project	2024	0.055	0.030
VDOT	WEST END TRANSITWAY OPERATIONS - New Project	2024	1.948	2.080
VDOT	MANASSAS TRAFFIC SIGNAL OPTIMIZATION & S/WARE EQUIP UPGRADE - New Project	2025	2.296	0.580
MDOT	Purple Line/Capital Crescent Trail Construction (3.3 Mile Trail)	2023	0.088	0.080
MDOT	LOTS State of Maryland Guaranteed Ride Home	2024	11.634	5.919
MDOT	Sidewalk improvements/pedestrian facilities; Smart Signal projects; Park and Ride facilities	2022-2023	1.620	0.130
MDOT	Sidewalk improvements/pedestrian facilities; Smart Signal projects; Park and Ride facilities	2024-2025	1.840	0.110

TPB RESOLUTION R19 -2022: ADOPTION OF 2022-2025 CMAQ TARGETS

TPB R19 -2022
June 15, 2022

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION TO ADOPT REGIONAL CONGESTION MITIGATION AND AIR QUALITY PROGRAM PERFORMANCE MEASURE TARGETS FOR 2022-2025 FOR THE NATIONAL CAPITAL REGION

WHEREAS, the National Capital Region Transportation Planning Board (TPB), as the federally designated metropolitan planning organization (MPO) for the Washington region, has the responsibility under the provisions of the Fixing America's Surface Transportation (FAST) Act, reauthorized November 15, 2021 when the Infrastructure Investment and Jobs Act (IIJA) was signed into law, for developing and carrying out a continuing, cooperative and comprehensive transportation planning process for the metropolitan area; and

WHEREAS, the provisions of the federal surface transportation acts continue the implementation of performance-based planning and programming to achieve desired performance outcomes for the multimodal transportation system, including the setting of targets for future performance by States and metropolitan planning organizations (MPOs); and

WHEREAS, the Federal Highway Administration issued a rulemaking for state departments of transportation (DOTs) and MPOs to quadrennially establish data-driven targets for the CMAQ Program performance measures and for MPOs to work in coordination with state DOTs in the development of two-year and four-year targets; and

WHEREAS, the District Department of Transportation (DDOT), the Maryland Department of Transportation (MDOT), the Virginia Department of Transportation (VDOT) and the TPB are required to establish unified two-year and four-year targets for the Washington-DC-VA-MD urban area for the CMAQ Program performance measures of Peak Hour Excessive Delay (PHED) and Mode Share – Non-Single Occupancy Vehicle (Non-SOV); and

WHEREAS, DDOT, MDOT, VDOT are required to establish two-year and four-year targets for the performance measure of Emissions Reduction from CMAQ-funded projects and programs for their portion of the Washington DC nonattainment area for two applicable criteria pollutants and precursors: Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NOx), and the TPB is required to coordinate with state DOTs in the establishment of two-year and four-year targets for emissions reduction from CMAQ-funded projects and programs for the portion of the Washington DC nonattainment area within the metropolitan planning area boundary; and

WHEREAS, TPB staff have coordinated with officials at DDOT, MDOT and VDOT to develop regional CMAQ Program targets that are evidence based, consistent with the targets submitted by each member state DOT, and reflective of the outcomes expected through the implementation of funded projects, programs, and policies; and

WHEREAS, the TPB encourages every jurisdiction in the region to adopt aspirational goals and calls on the transportation agencies of the region to redouble their efforts to develop projects, programs and policies to achieve reductions in traffic congestion and emissions; and

WHEREAS, the TPB will use the two-year and four-year regional CMAQ Program target setting process as one method to evaluate the region’s progress toward achieving said aspirational goals going forward with each future performance period; and

WHEREAS, these CMAQ Program targets have been reviewed and recommended for TPB approval by the TPB Technical Committee at its May 6 and June 3 meetings, and have been reviewed by the TPB at its May 18 meeting;

NOW, THEREFORE, BE IT RESOLVED THAT the National Capital Region Transportation Planning Board adopts the following set of two-year and four-year CMAQ Program targets for the period 2022-2025 for the National Capital Region, as shown in the following tables and as described in the attached materials.

CMAQ Program: Traffic Congestion

Performance Measure for the Washington DC-MD-VA Urbanized Area	2-year Target CY 2022 – 2023	4-year Target CY 2022 – 2025
Peak Hour Excessive Delay (PHED) – Annual hours of peak hour excessive delay per capita	22.5 Hours	22.7 Hours
Mode Share - Percent of Non-SOV Travel on the National Highway System (NHS)	37.4%	37.7%

CMAQ Program: Emissions Reduction

Total Emissions Reductions for the TPB portion of the Washington DC-MD-VA nonattainment area	2-year Target FFY 2022 – 2023	4-year Target FFY 2022 – 2025
Volatile Organic Compounds (VOCs)	0.610 Kg/Day	9.408 Kg/Day
Nitrogen Oxides (NOx)	2.830 Kg/Day	21.117 Kg/Day

Adopted by the Transportation Planning Board at its regular meeting on June 15, 2022