Memphis Urban Area MPO CMAQ Performance Plan

Memphis, TN-MS-AR Urbanized Area

Baseline Performance Period Report

3rd Performance Period

October 2026 to 2030

Memphis MPO
METROPOLITAN PLANNING ORGANIZATION
Strengthening Regional Transportation

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1. CMAQ Program Performance

One of the key features of MAP-21, the FAST Act, and their continuation through the Infrastructure Investment and Jobs Act (IIJA) is the establishment of performance and outcome based programs for transportation decisions. The regulation established two congestion measures and one on-road mobile source emission reduction measure for the Congestion Mitigation and Air Quality (CMAQ) Program (PM3).

This report summarizes the federal requirements for the Memphis Urban Area Metropolitan Planning Organization (MPO) to establish performance measure targets associated with the Congestion Mitigation and Air Quality Improvement (CMAQ) program for the 3rd Performance Period (October 2026 – 2030). The Tri-State PM3 Working Group (Tennessee, Mississippi, and Arkansas) reached consensus on the proposed Traffic Congestion targets during its March 10, 2026, working group call. The On-Road Mobile Source Emissions targets were developed with TDOT and the Knoxville TPO during spring 2026, and the full target set was presented for adoption at the Memphis MPO Engineering & Technical Committee (ETC) and Transportation Policy Board (TPB) meetings on July 30, 2026.

2. Overview and Background

In July 2012, Congress passed the Moving Ahead for Progress in the 21st Century Act (MAP-21) and created a performance-based surface transportation program. The Fixing America's Surface Transportation Act (FAST Act) was signed into law in December 2015, and the Infrastructure Investment and Jobs Act (IIJA), also known as the "Bipartisan Infrastructure Law," was signed into law in November 2021, continuing and refining those efforts.

To carry out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, FHWA finalized three performance measures: two congestion measures and one on-road mobile source emission reduction measure (Table 1). Two Subparts of 23 CFR Part 490, promulgated through the PM3 regulation, established the performance measures for the CMAQ Program required by MAP-21:

- Subpart G (Measures to Assess the CMAQ Program – Traffic Congestion), and
- Subpart H (Measure to Assess the CMAQ Program – On-Road Mobile Source Emissions)

Table 1: CMAQ Performance Measures Associated with the PM3 Regulation

Subpart and Measure	Measure Description	Target Setting
Subpart G: Traffic Congestion	PHED Measure: Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita	Tri-State Target
	Percent of Non-SOV Travel Measure: Percent of Non-Single Occupancy Vehicle (SOV) Travel	Tri-State Target
Subpart H: On-Road Mobile Source Emissions	Total Emissions Reduction Measure: 2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor for all projects funded with CMAQ funds	Statewide Target

For Subpart G, targets are set by consensus among the Tri-State partners, the Tennessee Department of Transportation (TDOT), Mississippi Department of Transportation (MDOT), Arkansas Department of Transportation (ARDOT), West Memphis MPO (WMPO), and Memphis MPO, since the traffic congestion measures apply to a single, unified Tri-State Urbanized Area. For Subpart H, Tennessee and Mississippi each set individual statewide targets for CMAQ-funded projects.

In addition to the reporting required by the PM3 regulation, Title 23 U.S.C. 149(l) requires MPOs that serve a Transportation Management Area (TMA) with a population over one million, for which the boundaries of that TMA overlap a nonattainment or maintenance area for at least one of the transportation-related criteria pollutants, to biennially prepare and submit a CMAQ Performance Plan. In the CMAQ Performance Plan and its biennial updates, MPOs report 2- and 4-year targets, describe how they plan to meet those targets, and detail their progress toward achieving them throughout the performance period.

MPOs subject to the CMAQ Performance Plan requirement must submit a plan to their respective state DOTs at the beginning of a four-year performance period and update it biennially, once at the midpoint and again at the end.

Figure 1: 3rd Performance Period Timeline

Milestone	Reporting Year	Due Date
2nd Full Performance Period Progress Report & CMAQ Performance Plan (2022–2026)	—	Oct 1, 2026
3rd Baseline Performance Period Progress Report & CMAQ Performance Plan (this report)	—	**Oct 1, 2026**
3rd Mid Performance Period Progress Report & CMAQ Performance Plan	2028 (2027 data)	Oct 1, 2028
3rd Full Performance Period Progress Report & CMAQ Performance Plan	2030 (2029 data)	Oct 1, 2030

Reporting years for the 3rd Performance Period are 2028 and 2030. Each reporting year is evaluated using data from the preceding year (2027 and 2029, respectively) for the traffic congestion measures. The on-road mobile source emissions measure is evaluated on a Federal fiscal-year basis (see Section 5.1).

Memphis MPO, which covers parts of Tennessee and Mississippi, is subject to this requirement and must submit the plan to both Tennessee and Mississippi State DOTs, which will include it as a separate section of the biennial reports submitted to FHWA.

2.1 Content of a CMAQ Performance Plan

23 CFR 490.107 requires that CMAQ Performance Plans include the following four key components:

- Condition/Performance: A baseline level of condition/performance at the beginning of the performance period for each of the CMAQ measures.
- Targets: The targets that the MPOs establish for each of the applicable CMAQ performance measures, including any updates at the midpoint of the performance period, if applicable.

- Description of Projects: A description of projects scheduled for CMAQ funding that will contribute toward achieving the targets.
- Assessment of Progress: For the mid and full performance period report, updates to the CMAQ Performance Plan include an assessment of how CMAQ projects contribute toward achieving the targets.

As this is a Baseline Performance Period Report, it establishes the starting conditions and performance, as well as the newly adopted 2-year and 4-year targets for the 3rd Performance Period. Section 6 identifies the CMAQ-funded projects obligated in FY 2026 that form the basis of the Subpart H targets. Additional projects will be identified through the FY 2026-29 Transportation Improvement Program (TIP) and subsequent TIP amendments, and will be reported, with an assessment of progress, in the Mid (due October 1, 2028) and Full (due October 1, 2030) Performance Period updates.

3. CMAQ Performance Plan – Memphis MPO

Memphis MPO CMAQ Performance Plan Applicability:

- Serves a TMA > 1 Million Population
- Includes Maintenance for Ozone (O_3)
    - Entire Shelby County, TN – Maintenance for O_3
    - Partial DeSoto County, MS – Maintenance for O_3

In consultation with West Memphis MPO, the Memphis Urban Area MPO convened a Tri-State PM3 Working Group to establish the 3rd Performance Period targets, with a coordination call held on March 10, 2026. Representatives participating as part of the working group included:

- Tennessee Department of Transportation (TDOT)
- Mississippi Department of Transportation (MDOT)
- Arkansas Department of Transportation (ARDOT)
- West Memphis MPO (WMPO)
- Memphis Urban Area MPO (MMPO)
- Federal Highway Administration (FHWA) – TN & MS Divisions

The proposed targets discussed on the March 10, 2026, call were presented for adoption at the Memphis MPO Engineering & Technical Committee (ETC) and Transportation Policy Board (TPB) meetings on July 30, 2026. Concurrence from the other Tri-State partners is being secured individually through each agency's own board process and/or STIP development, per the following anticipated schedule:

Table 2: Anticipated Concurrence Schedule

Agency	Anticipated Concurrence
Memphis MPO	Transportation Policy Board – July 30, 2026
TDOT	Late August/Early September 2026
MDOT	Included as part of the FY 2027-2023 STIP development
ARDOT	August 2026
West Memphis MPO	TBD, following ARDOT approval

4. Baseline Condition/Performance for Traffic Congestion Measures

The Memphis Urbanized Area, which covers parts of Tennessee, Mississippi, and Arkansas, including Memphis Urban Area MPO (MMPO) and West Memphis MPO (WMPO), continues to meet the threshold set in Subpart G, with maintenance designations for Ozone (O_3) covering all of Shelby County, TN, all of Crittenden County, AR, and part of DeSoto County, MS — requiring the Tri-State Urbanized Area to establish single, unified targets for:

- The annual hours of Peak Hour Excessive Delay (PHED) per capita, and
- The percentage of Non-Single Occupancy Vehicle (Non-SOV) travel

4.1 Peak Hour Excessive Delay Measure (PHED)

The Tri-State working group continued to use the National Performance Management Research Data Set (NPMRDS)/INRIX data, as identified in 23 CFR 490.709, for establishing the Tri-State PHED baseline and target. Annual PHED per capita for the Memphis, TN-MS-AR Urbanized Area over the most recent seven years is shown below.

Table 3: Annual Hours of PHED per Capita, Memphis TN-MS-AR Urbanized Area (2019–2025)

2019	2020	2021	2022	2023	2024	2025
7.5	6.9	9.1	7.4	10.0	8.0	**8.1**

2025 data reflect the most recent available NPMRDS/INRIX data at the time of this report and were uncertified as of February 2026. Data source: NPMRDS – INRIX (2020–2025).

Consistent with the methodology used in the 2nd Performance Period, the group calculated the highest observed monthly PHED value from the most recent complete calendar year (2024: 0.9 hours, occurring in March and April) and multiplied it by 12 to arrive at an annual value of 10.8 hours. The group also considered an alternative target of 8.5 hours, based on the 2021–2025 average, given that 2025 monthly values were lower (peaking at 0.7 hours). Both options were discussed in light of ongoing and upcoming major construction projects expected to sustain or increase delay through the performance period, including:

- Recently completed: I-55 Crump Interchange (2025); Germantown Road & Wolf River Boulevard Intersection (2025); Getwell Road, Star Landing to Church (2024)
- Under construction: Lamar Avenue, Shelby Drive to Raines/Perkins (2026); SR-14, east of Kerrville Road to the Tipton County line (2026); SR-57, Collierville-Arlington to SR-385 (2026); Commerce Street Extension, Della to Jaybird (2026); I-55 widening, Church to one mile north of SR-302 (2026); Summer Avenue, I-40 to Sycamore View (2027)
- Upcoming: Lamar Avenue, Raines/Perkins to Getwell (2027); I-240 & Airways Interchange (2027); King's Crossing, I-55 Bridge (2027); I-40 & Airline Road Interchange (2027)

Given the continued volume of major construction activity anticipated through the performance period, the Tri-State Member Agencies (TDOT, MDOT, ARDOT, West Memphis MPO, and Memphis MPO) agreed on the March 10, 2026 call to retain the prior methodology and set the 2-year (2028) and 4-year (2030)

PHED targets at 10.8 hours, the same level adopted for the 2nd Performance Period, with the option to revisit at the midpoint.

4.1.1 Target

Table 4: Tri-State Area PHED Targets, 3rd Performance Period

Measure	Baseline (2026)	2-Year Target (2028)	4-Year Target (2030)
Annual Hrs. of Peak-Hour Excessive Delay per Capita	8.1 Hours (2025 data)	10.8 Hours	10.8 Hours

4.2 Percentage of Non-Single Occupancy Vehicle (Non-SOV) Travel

The working group continued to use Method A, American Community Survey (ACS) data, as identified in 23 CFR 490.709, for the Non-SOV Travel measure. The most recent ACS "Commuting to Work" estimates (2020–2024) for the Memphis TN-MS-AR Urbanized Area are shown below.

Table 5: Memphis TN-MS-AR UZA – Commuting to Work (ACS Estimates, 2020–2024)

Mode	2020	2021	2022	2023	2024
Drove Alone (SOV)	83.2%	82.3%	80.3%	78.6%	76.0%
Carpooled	9.8%	9.3%	9.5%	9.4%	10.8%
Transit (excl. taxicab)	0.8%	0.6%	0.6%	0.5%	0.3%
Walked	1.0%	0.9%	1.1%	1.1%	1.3%
Bicycle	0.1%	0.1%	0.1%	0.1%	0.0%
Taxi, motorcycle, or other	0.9%	0.9%	1.1%	1.1%	1.2%
Worked from Home	4.2%	5.8%	7.3%	9.0%	9.8%
% Non-SOV	**16.8%**	**17.7%**	**19.7%**	**21.4%**	**24.0%**

The data continues the trend identified in the 2nd Performance Period: a steady, multi-year increase in Non-SOV travel, driven primarily by continued growth in working from home (from 4.2% in 2020 to 9.8% in 2024) alongside a modest increase in carpooling. The 2024 Non-SOV share of 24.0% is used as the 2026 baseline for this measure, reflecting the most recent available ACS data at the start of the 3rd Performance Period.

4.2.1 Target

For target-setting, the working group again applied the 5-year ACS average methodology used in the 2nd Performance Period, rather than the higher single-year 2024 value or the alternative logarithmic and linear growth projections that were also discussed, to avoid setting a target that could be skewed by a single year's data. Using the 5-year average (2020–2024), the Tri-State Member Agencies agreed to set the 2-year (2028) and 4-year (2030) targets at 19.9%.

Table 6: Tri-State Area Percent of Non-SOV Travel Targets, 3rd Performance Period

Measure	Baseline (2026)	2-Year Target (2028)	4-Year Target (2030)
Percentage of Non-SOV Travel	24.0% (2024 ACS data)	19.9%	19.9%

5. Baseline Condition/Performance for On-Road Mobile Source Emission Measures

Memphis MPO is currently designated as a Maintenance Area for Ozone (VOC and NOx) and is required to establish targets for the on-road mobile source emissions measure. MPO staff worked with TDOT and the Knoxville TPO to determine the statewide 2-year and 4-year CMAQ Total Emissions Reduction targets for the 3rd Performance Period. In Tennessee, this performance measure applies to the Memphis and Knoxville urbanized areas, and a single statewide target is set from the combined reductions of both areas.

Total emission reductions for all CMAQ-funded projects obligated in the Memphis and Knoxville urbanized areas were compiled from the FHWA CMAQ Public Access System (UPACS). Table 7 presents the reductions reported for the 2nd Performance Period (FY 2022–FY 2025) and for FY 2026, the first year of the 3rd Performance Period.

Table 7: Statewide Annual Emission Reductions from CMAQ-Funded Projects (kg/day)

Federal Fiscal Year	Memphis			Knoxville			TN Statewide
	VOC	NOx	PM2.5	VOC	NOx	PM2.5	VOC / NOx
FY 2022	30.522	24.204	—	0.029	1.636	0.002	30.551 / 25.840
FY 2023	0.174	0.945	—	0.045	0.942	0.004	0.219 / 1.887
FY 2024	0.000	0.000	—	0.398	6.074	0.010	0.398 / 6.074
FY 2025	1.200	20.822	0.007	0.041	1.838	0.015	1.241 / 22.659
FY 2022–25 total	**31.896**	**45.971**	**0.007**	**0.513**	**10.490**	**0.031**	**32.409 / 56.460**
FY 2026	**0.109**	**3.992**	**0.008**	**0.985**	**1.903**	**0.221**	**1.094 / 5.895**

Data source: FHWA CMAQ Public Access System (UPACS), CMAQ project list compiled by Memphis MPO staff, 2025. Memphis PM2.5 is not an applicable pollutant for the Memphis urbanized area, which is designated for maintenance of Ozone (VOC and NOx) only; the values shown for Memphis PM2.5 arise from transit vehicle replacement projects reported statewide.

5.1 Baseline

The Tennessee statewide baseline for the 3rd Performance Period was set at the FY 2025 statewide total reported in UPACS, 1.241 kg/day (VOC) and 22.659 kg/day (NOx), representing the final year of the 2nd Performance Period and the most recent complete year of obligation data available at the start of the 3rd Performance Period.

In Mississippi, MDOT reported that the DeSoto County part of the Memphis MPO area had a few CMAQ-funded projects targeting congestion and traffic flow. These projects lowered emissions by 0.022 kg/day for VOC and 0.122 kg/day for NOx. This data reflects the last year of the 2nd Performance Period and is the latest complete obligation data available at the beginning of the 3rd Performance Period.

5.2 Target Methodology

There was no call for CMAQ projects in 2026; however, both the Memphis and Knoxville areas received CMAQ transit awards during FY 2026. Because programmed obligations beyond FY 2026 are not yet known, the TDOT working group set the statewide targets by extending the FY 2026 combined Memphis and Knoxville emission reductions across the target period:

- 2-Year Target (2028): total FY 2026 project emissions (Knoxville + Memphis) × 2, reflecting obligation data from October 1, 2025, through September 30, 2027 (FY 2026 - FY 2027)
- 4-Year Target (2030): total FY 2026 project emissions (Knoxville + Memphis) × 4, reflecting obligation data from October 1, 2025, through September 30, 2029 (FY 2026 - FY 2029)

This approach assumes that emission reductions from CMAQ obligations continue at the FY 2026 rate for each remaining year of the performance period. It is a conservative estimate: it does not assume growth in CMAQ awards, and it will be revisited at the Mid Performance Period once FY 2027 obligations are reported in UPACS.

This differs from the methodology used in the 2nd Performance Period, which set the 2-year target by summing the lowest year of reductions from FY 2018 to FY 2021 plus FY 2022 (Knoxville and Memphis combined), and the 4-year target by taking three times that lowest year plus FY 2022. That 4-year target was subsequently updated at the midpoint to the actual reductions reported for the first three years of the period.

To date, no projects have been identified in the Mississippi portion of the Memphis MPO area (DeSoto County), and MDOT agreed to retain the 2- and 4-year targets of ≥ 0.

5.3 Target

Table 8: On-Road Mobile Source Emissions – Baseline & Targets, 3rd Performance Period

Measure	Tennessee (TDOT)			Mississippi (MDOT)		
	Baseline (FY 2025)	2-Year Target (2028)	4-Year Target (2030)	Baseline	2-Year Target (2028)	4-Year Target (2030)
Total Emissions Reductions (VOC) kg/day	1.241	**2.188**	**4.376**	0.022	≥ 0	≥ 0
Total Emissions Reductions (NOx) kg/day	22.659	**11.790**	**23.580**	0.122	≥ 0	≥ 0

VOC and NOx are the applicable criteria pollutant precursors for the Memphis MPO area, which is designated maintenance for Ozone. A statewide PM2.5 target of 0.458 kg/day (2-year) and 0.916 kg/day (4-year), derived using the same FY 2026 × 2 and × 4 methodology, also appears in the TDOT working file; PM2.5 applies to the Knoxville area and is not an applicable pollutant for the Memphis MPO area.

Memphis MPO staff continued coordination with TDOT and the Knoxville TPO on a joint call to finalize the statewide methodology and targets ahead of the July 30, 2026, Transportation Policy Board meeting.

6. Description of Projects

There was no call for CMAQ projects in 2026. Both the Memphis and Knoxville areas did, however, receive CMAQ transit awards obligated in FY 2026, and these projects form the basis of the Subpart H targets adopted for the 3rd Performance Period (Section 5.2). Table 9 lists the FY 2026 CMAQ-funded projects and their reported emission reduction benefits.

Table 9: CMAQ-Funded Projects Obligated in FY 2026

Area	Description of Project	Project Category	VOC (kg/day)	NOx (kg/day)	PM2.5 (kg/day)
Memphis	FTA Transfer: purchase of 10 diesel buses and spare components	New or Expanded Transit Service	0.109	3.992	0.008
Knoxville	Maryville-Alcoa Central Traffic Operations System Upgrades	Traffic Flow Improvements / ITS	0.852	1.698	0.205
Knoxville	Chapman Highway Transit Signal Priority	Transit / ITS	0.062	0.099	0.007
Knoxville	Kingston Pike Transit Signal Priority	Transit / ITS	0.071	0.106	0.009
Total (statewide)			**1.094**	**5.895**	**0.229**

The Memphis FY 2026 project, the FTA Transfer transit vehicle procurement, contributes to the Percent of Non-SOV Travel measure and the on-road mobile source emissions measure. None of the FY 2026 projects are anticipated to contribute measurably to the PHED measure.

Additional CMAQ-funded projects for FY 2027 to FY 2029 will be identified through the FY 2026-29 Transportation Improvement Program (TIP), as well as through future CMAQ funding cycles, and will be documented, together with their anticipated PHED, Non-SOV, VOC, and NOx benefits, in the 3rd Mid Performance Period Progress Report, due to FHWA on October 1, 2028. No projects have been identified to date in the Mississippi portion of the Memphis MPO area (DeSoto County).

7. Summary of Adopted 3rd Performance Period Targets

Table 10: Summary of Adopted Targets, 3rd Performance Period

Measure	Subpart / Target Type	Baseline (2026)	2-Year Target (2028)	4-Year Target (2030)
Annual Hrs. of PHED per Capita	Subpart G – Tri-State	8.1 Hours	10.8 Hours	10.8 Hours
Percentage of Non-SOV Travel	Subpart G – Tri-State	24.0%	19.9%	19.9%
Total Emissions Reductions (VOC) kg/day	Subpart H – TN statewide	1.241	2.188	4.376
Total Emissions Reductions (NOx) kg/day	Subpart H – TN statewide	22.659	11.790	23.580
Total Emissions Reductions (VOC) kg/day	Subpart H – MS statewide	0.022	≥ 0	≥ 0
Total Emissions Reductions (NOx) kg/day	Subpart H – MS statewide	0.122	≥ 0	≥ 0