Congestion Mitigation and Air Quality Improvement Program (CMAQ)

Mid-Performance Period Progress Report
2022-2025 Performance Period
East-West Gateway Council of Governments

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EAST-WEST GATEWAY
Council of Governments

Creating Solutions Across Jurisdictional Boundaries

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Introduction

The purpose of this report is to provide an update to East-West Gateway Council of Governments' (EWGCOG) 2022 Baseline CMAQ Performance Period Report. The initial plan included baseline data about the EWGCOG region and established targets, in coordination, with IDOT and MoDOT. Targets were established for peak hour excessive delay (PHED), non-single occupancy vehicle (Non-SOV) travel, and on-road mobile source emissions reduction. This document will provide an overview of the progress made towards meeting the region's 2-year targets. Additionally, this report will document any revisions made to 2-year targets for the current performance period.

Targets

To set targets for the 2022-2025 CMAQ Performance Period, a baseline performance was established. For PHED, the baseline is performance in the year 2021. For non-SOV, the baseline is regional performance in 2020. The total emissions reduction measure uses projects documented in the CMAQ Public Access System, between the fiscal years 2018-2021, as a baseline. All baselines and targets are presented in the tables and narrative below.

Peak Hour Excessive Delay (PHED) Measure

PHED is the peak hour excessive delay per capita on the National Highway System over one year. Excessive delay is any travel less than the larger value of either 20 mph or 60% of the posted speed limit. Data are for the St. Louis urbanized area and are gathered from the National Performance Management Research Data Set (NPMRDS). The peak hours of analysis are 3-7 pm.

The 2021 baseline PHED is 6.6 hours. Based on COVID-19 pandemic travel patterns, remote work and the transition back to normal travel patterns, EWGCOG established a 2023 2-year target of 8.4 hours, and a 4-year target of 8.3 hours for PHED for 2025. When targets were established in 2022, the region was emerging from the COVID-19 pandemic, which had greatly shifted travel patterns, resulting in lower delay on the region's roadways. By 2022 and 2023, the annual hours of peak hour excessive delay for the calendar years were 5.9 hours and 6.7 hours, respectively for the region. Historically, the annual hours of peak hour excessive delay per capita for the years 2017, 2018 and 2019, were 9.2 hours, 9.5 hours, and 9.6 hours, respectively. While the telecommuting mode share has remained high after the COVID-19 pandemic, vehicle miles traveled (VMT) in the region is still forecasted to increase. However, increased focus on bicycle and pedestrian infrastructure in the region is intended to increase the share of those biking and walking to work which may help to slow down the rate of increasing VMT. Additionally, there is evidence that peak hour travelers have distributed their travel throughout the day. As a result, PHED is expected to increase but not reach pre-pandemic levels in the near future. Thus, EWGCOG does not recommend adjusting the 4-year target, so it will remain at 8.3 hours. Historical data and targets for PHED are shown in **Table 1** and **Figure 1**.

Table 1. PHED Baseline and Target						
Performance Measure	Baseline	2-year Target (2023)	Current Performance (2023)	Target Achieved	4-year Target (2025)	4-year Target Adjusted
PHED	6.6 hours	8.4 hours	6.7 Hours*	Yes	8.3 Hours	No

* 6.7 hours in this report is derived from the Regional Integrated Transportation Information System (RITIS). However, it should be noted that the FHWA reports PHED as 1.3 due to an incorrect 2023 data submittal by MoDOT. This issue is in the process of being remedied.

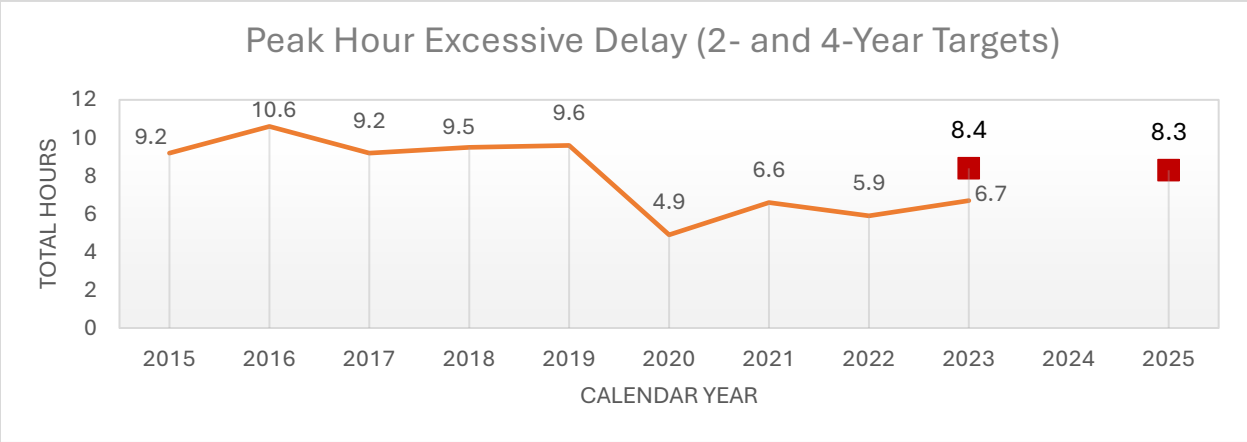


Figure 1. 2- and 4-year targets in relation to historical PHED Data. Source: NPMRDS HERE (2015-2016) and NPMRDS INRIX (2017-2023)

Non-Single Occupancy Vehicle (Non-SOV) Measure

Non-SOV mode share is the percentage of commuters who use any mode other than single-occupancy vehicles, including carpool, transit, bike, walk, telecommuting, and other modes. Data are provided for the St. Louis urbanized area and are 5-year rolling average estimates based on the U.S. Census Bureau's American Community Survey (Table DP03).

In 2020, Non-SOV travel increased to 19.5%, 2% higher than in 2019. This increase was primarily a result of an increase in the telecommuting mode share. 2020 served as the baseline during the time targets were set in 2022 due to a delay in 2021 census data updates. EWGCOG set a 2023 2-year target of 18.0% and a 2025 4-year target of 18.2% to account for an expected decrease in telecommuting and increased investments in bicycle and pedestrian facilities. In 2021, Non-SOV travel increased to 21.8% and increased again in 2023 to 23.8 %.

EWGCOG recommends raising the 4-year target for non-SOV travel to 24.0%. This recommendation comes after the region has already exceeded the 2023 and 2025 non-SOV travel goals since 2020. The increase in non-SOV travel is attributed to adoption of long-term telework policies by companies around the region. There is also a heightened emphasis on and investments in bicycle and pedestrian infrastructure through 2027, alongside policies aimed at boosting the share and safety of biking and walking. Transit ridership in the region is also beginning to increase after the pandemic related ridership challenges. By increasing this target, EWGCOG aims to align with current performance levels and

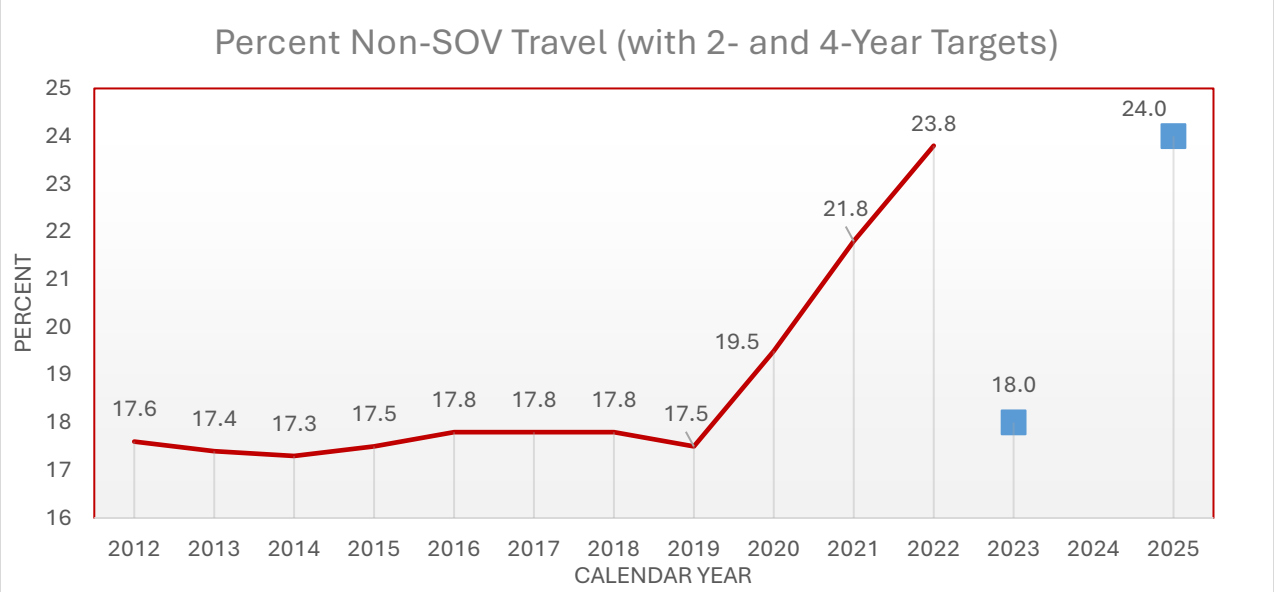
enhance accountability in non-SOV travel investments. Historical data and targets for non-SOV travel are shown in **Table 2** and **Figure 2**.

Table 2. Non-SOV Baseline and Target						
Performance Measure	Baseline	2-year Target (2023)	Current Performance (2022)	Target Achieved	4-year Target (2025)	4-year Target Adjusted
Non- SOV Travel	19.5%	18.0%	23.8%*	YES**	24.0%	YES

*The FHWA reports 21.8% for the region, using 2021 ACS Table DP03 5-yr Estimate (in lieu of 2022 ACS Table DP03 5-yr Estimate) to derive the 2-year actuals for the Percent Non-SOV Travel Measures for the applicable urbanized areas in accordance with the regulation. This is because the 2021 ACS Table DP03 5-yr Estimate (reflects 2010 Decennial Census Urban Areas) is the "most recent data" [23 CFR 490.709(f)(1)(i)] for the "determined Urban Area" boundaries during applicability determination in 2021 for the 2nd Performance Period [23 CFR 490.105(e)(8)(iii)(E) and 23 CFR 490.105(f)(5)(iii)(E)] were based on 2010 Decennial Census Urban Area boundaries). The 2020 Decennial Census urban area which is reflected in census data from 2020 onwards did not change significantly from 2010, and thus EWGCOG is choosing to report the 2022 non-SOV value.

**2023 American Community Survey 5-year estimate data are not available until December 12, 2024. Because the 2022 performance has already exceeded the 2023 target, the table states the target has been achieved, however, 2023 data is needed for final confirmation..

Figure 2. 2- and 4-year targets in relation to historical Non-SOV Data. Source: American Community Survey 5 Year Estimate for "Commuting to Work"



Total Emissions Reduction Measure

The FHWA measures emissions reduction as the total emissions reductions for the relevant pollutants and precursors for projects in the EWGCOG region that receive funding from the Congestion Mitigation and Air Quality (CMAQ) program. The region is in attainment of air quality standards for carbon monoxide (CO) and particulate matter (PM2.5 and PM10). The relevant pollutants and precursors that our region must track and set emissions reductions targets for are the ozone formation precursors of nitrogen oxides (NOx) and volatile organic compounds (VOC). Data are gathered from the CMAQ Public Access System.

The baseline for on-road mobile source emissions reduction is the regional emissions reduction performance between 2018 and 2021 (**Table 3**). The baseline uses only scheduled CMAQ funded projects that were scheduled and were either obligated or completed during the performance period.

Investments aimed at reducing congestion and emissions have allowed the region to surpass its 2-year targets for both NOx and VOC. Additionally, the region has exceeded its 4-year target for NOx and is on track to meet the 4-year VOC target. The Marine Vessel Engine Repower project in Missouri played a significant role in achieving these targets. Without this project, the region would have missed the 2-year VOC targets but still met the 2-year NOx target. Illinois did met their 2-year NOx and VOC targets, likely due to delays in project completion from as late as FY2012.

With ongoing efforts to reduce peak hour excessive delay through infrastructure improvements that minimize delays and idling, and by increasing non-SOV travel through policies and infrastructure that enhance safe travel options like biking and walking, further emission reductions are anticipated. EWG recommends maintaining the current targets while prioritizing projects that have the most significant impact on emissions reduction (**Table 4**).

Table 3. Total Emissions Reduction Baseline Performance (FFY 2018-2021)

FFY 2018-2021 Criteria Pollutants and Applicable Precursors from CMAQ Public Access System	IL (kg/day)	MO (kg/day)	Total (kg/day)
Nitrogen Oxides (NOx)	1.9	16.459	18.359
Volatile Organic Compounds (VOC)	6.9	89.162	96.062

Table 4. 2-year Total Emission Reductions Performance 2022-2023

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					
	FFY 2022-2025 CMAQ Program Totals (kg/Day)	2-year Target (kg/day)	Current Performance (2022-2023)	Target Achieved	4-year Target (kg/day)	4-year Target Adjusted
Nitrogen Oxides (NOx)	143.483	9.671	146.193	YES	143.483	NO
Volatile Organic Compounds (VOC)	8.673	3.308	7.011	YES	8.673	NO

Table 5 and **Table 6** break down 2-year performance and 2- and 4-year targets by State within the EWGCOG region.

Table 5. Performance and Targets - Illinois				
Pollutant	2-year target (FFY 2022-2023) comparison to actual 2-year performance			
	2-year Target (kg/day)	2-year Reported (kg/day)	Difference (kg/day)	4- year Target (kg/day)
Nitrogen Oxides (NO_x)	0.836	0.250	-0.586	1.479
Volatile Organic Compounds (VOC)	0.368	0.021	-0.347	0.464

Table 6. Performance and Targets – Missouri				
Pollutant	2-year target (FFY 2022-2023) comparison to actual 2-year performance			
	2-year Target (kg/day)	2-year Reported (kg/day)	Difference (kg/day)	4- year Target (kg/day)
Nitrogen Oxides (NO_x)	8.836	145.943*	137.107	142.004
Volatile Organic Compounds (VOC)	2.940	6.990	4.050	8.209

* The FHWA reports 145.942 for the 2-year actual performance of NOx for the region, using prepopulated data from the CMAQ Public Access System. As this a statewide reflection of emissions reduction, EWG reports emissions reductions based on emissions reduced per CMAQ project within the region.

Description of Projects (FFY 2024 – 2025)

Table 7 provides a description of projects scheduled for CMAQ funding that will contribute toward achieving 4-year targets for the traffic congestion and on-road mobile source emissions measures. The table groups CMAQ projects by general project type categories.

Table 7. Description of Projects Scheduled for CMAQ funding (FFY 2024 – 2025)

Project Category	Description of Projects	Applicable Pollutant	Anticipated Year	State	VOC Benefit (kg/day)	NOX Benefit (kg/day)	PHED Benefit	Non-SOV Benefit
Transit Improvement	Bus Replacement	Ozone	2024	IL	0.017	1.385	No	Yes
			2024	MO	0.054	3.705		
			2025	IL	0.000	0.000		
			2025	MO	0.000	0.000		
Travel Demand Management	Education & Outreach	Ozone	2024	IL	0.123	0.620	Yes	Yes
			2024	MO	0.000	0.000		
			2025	IL	0.009	0.044		
			2025	MO	0.010	0.056		
Bicycle-Pedestrian Facilities	Shared Use Paths and Cycle Tracks	Ozone	2024	IL	0.023	0.037	Yes	Yes
			2024	MO	0.005	0.260		
			2025	IL	0.018	0.024		
			2025	MO	0.079	0.154		
Transit Improvement	Vanpool Replacement	Ozone	2024	IL	0.064	0.370	No	Yes
			2024	MO	0.015	0.094		
Traffic Flow Improvements	Roundabouts	Ozone	2024	IL	0.940	1.171	Yes	No
			2024	MO	0.000	0.000		
Traffic Flow Improvements	Signal Improvements	Ozone	2024	IL	0.173	0.195	Yes	No
			2024	MO	0.243	0.343		
			2025	IL	0.147	0.160		
			2025	MO	0.459	0.748		
Traffic Flow Improvements	Turn Lanes / Lane Reconfiguration	Ozone	2024	IL	0.069	0.100	Yes	No
			2024	MO	0.008	0.014		
			2025	IL	0.000	0.000		
			2025	MO	0.060	0.105		
Traffic Flow Improvements	Traffic Management	Ozone	2024	IL	0.004	0.006	Yes	No
			2024	MO	0.138	0.219		
			2025	IL	0.000	0.000		
			2025	MO	0.054	0.031		
Electrification	Charging Stations	Ozone	2025	IL	0.057	0.092	No	No

Summary of MoDOT / IDOT / EWG System Performance Targets

To summarize, 2025 targets were reviewed based on system performance from 2023. Based on that review the following 2025 4-year targets are recommended.

Performance Measure	2021 Baseline	2023 Performance	2023 2-year Target	2025 4-year Target
Peak Hour Excessive Delay (PHED) Measure, reported in hours	6.6	6.7	8.4	8.3
Non-Single Occupancy Vehicle Travel (SOV) Measure, reported in percent	19.5%*	23.8%***	18.0%	24.0%
Total Emissions Reduction for NOx reported in kg/day	96.062**	146.193	9.671	143.483
Total Emissions Reduction for VOC reported in kg/day	18.359**	7.011	3.308	8.673

*Baseline from 2020 due to delay in release of 2021 ACS 5-year estimates

**Baseline from reported emissions reduction in CMAQ projects 2018-2021

***2022 performance reported