

CMAQ Program

DRAFT On-Road Mobile Source Emissions and Traffic
Congestion Targets



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Congestion Mitigation and Air Quality Improvement Program (CMAQ)

Performance Plan for St. Louis Metropolitan Area

Includes

Full Performance Period Progress Report (2018 – 2021)

Baseline Performance Period Report (2022 – 2025)



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CMAQ Overview

- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
 - Created in 1991 under ISTEA
 - MAP-21 / Fast Act – Performance Based Planning Process
 - Reauthorized under IIJA
- Provides funding to regions that face the challenge of attaining or maintaining the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, and/or particulate matter as established under the Clean Air Act.



Performance Reporting Timeline

On-Road Mobile Source Emission Measures (FFY)



Congestion Measures (CY)



CMAQ Reports

1st Baseline Report

1st Midpoint Report

1st Final Report

2nd Baseline Report

2nd Midpoint Report

2nd Final Report

Project Tracking

2017

2018

2019

2020

2021

2022

2023

2024

2025

2026



Applicability Determination

October 2021 - FHWA released an applicability determination for the 2nd performance period

Applicability for Traffic Congestion Measures

MPO Name	Urbanized area with population > 200K overlapping with MPA	Do the MPA, urbanized area and at least one designated nonattainment or maintenance area overlap? <u>And</u> does that overlap area contain any NHS route segments, according to HPMS?
East-West Gateway Council of Government	St. Louis, MO--IL	Yes- Required to establish targets for the traffic congestion measures for the urbanized area.

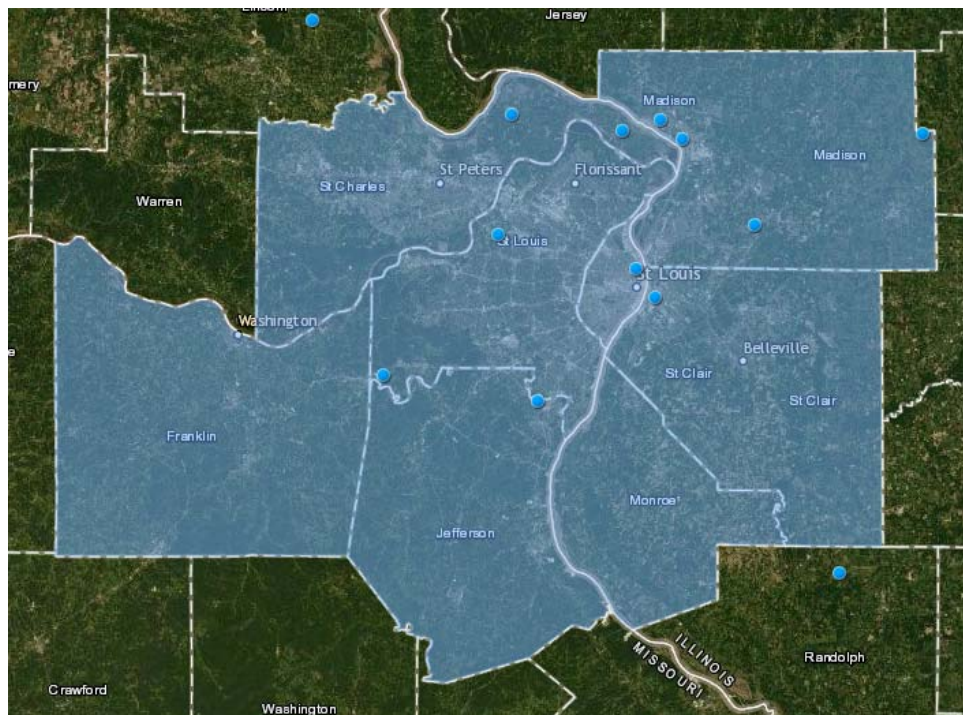
Applicability for On-Road Mobile Source Emissions Measures

MPO Name	Applicability Parameter			National Ambient Air Quality Standards (NAAQS)							Precursors	
	Do the MPA; urbanized area with population > 1m; and any one of the designated nonattainment or maintenance Area(s) Overlap?	Name of urbanized area with population > 1m overlapping with MPA	Name of additional urbanized area with population > 1m overlapping with MPA	24- hour PM10	PM2.5 (1997)	PM2.5 (2006)	PM2.5 (2012)	Ozone (2008)	Ozone (2015)	CO	VOC	NOx
East-West Gateway Council of Government	Yes - CMAQ Performance Plan Required	St. Louis, MO-IL						YES	YES		YES	YES

Regional Attainment Status

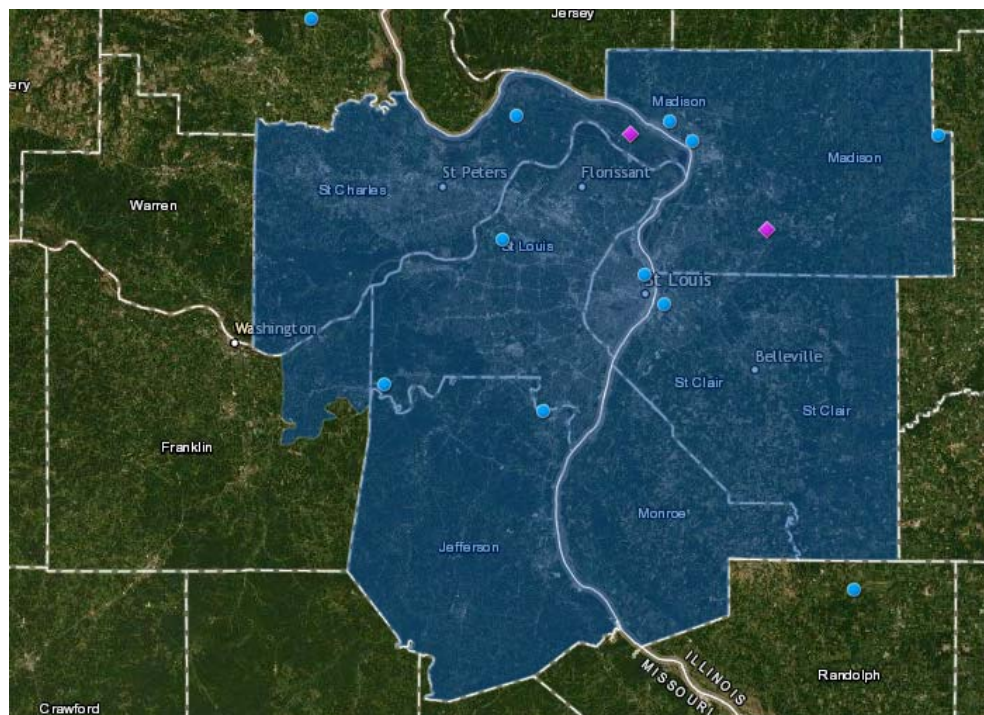
8 hour ozone (2008 Standard)

- Maintenance Area
- “Marginal” Classification



8-hour ozone (2015 standard)

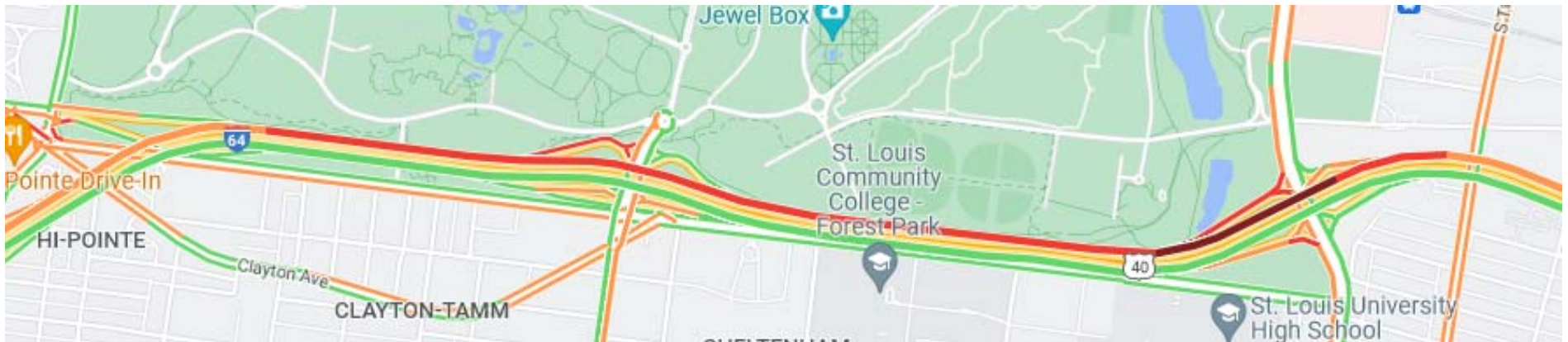
- Nonattainment Area
- “Marginal” Classification



Peak Hour Excessive Delay (PHED)

Traffic Congestion measure

- Excessive delay that travelers experience per year from traveling on National Highway System (NHS) roadways during peak travel periods per capita
- Our region's peak is 3pm to 7pm



Peak Hour Excessive Delay (PHED) Targets



1st Performance Period

2021 Target: 9.5 hours
2021 Actual: 6.6 hours
Met Target: Yes

2nd Performance Period

Targets
2023: 8.4 hours
2025: 8.3 hours

Methodology

Used a hybrid approach studying pre-pandemic trends and late 2021 monthly PHED data

Percent Non-Single Occupancy Vehicle (SOV) Travel

Traffic Congestion measure

- Percentage of “trips” that occur in Non-SOV vehicles or modes, including telecommutes and bike/walk
- American Community Survey (ACS) Data

Desired
Trend



Percent Non-SOV Travel Targets



1st Performance Period

2021 Target: 17.7%
2020 Actual: 19.5%
Met Target: Yes

2nd Performance Period

Targets
2023: 18.0%
2025: 18.2%

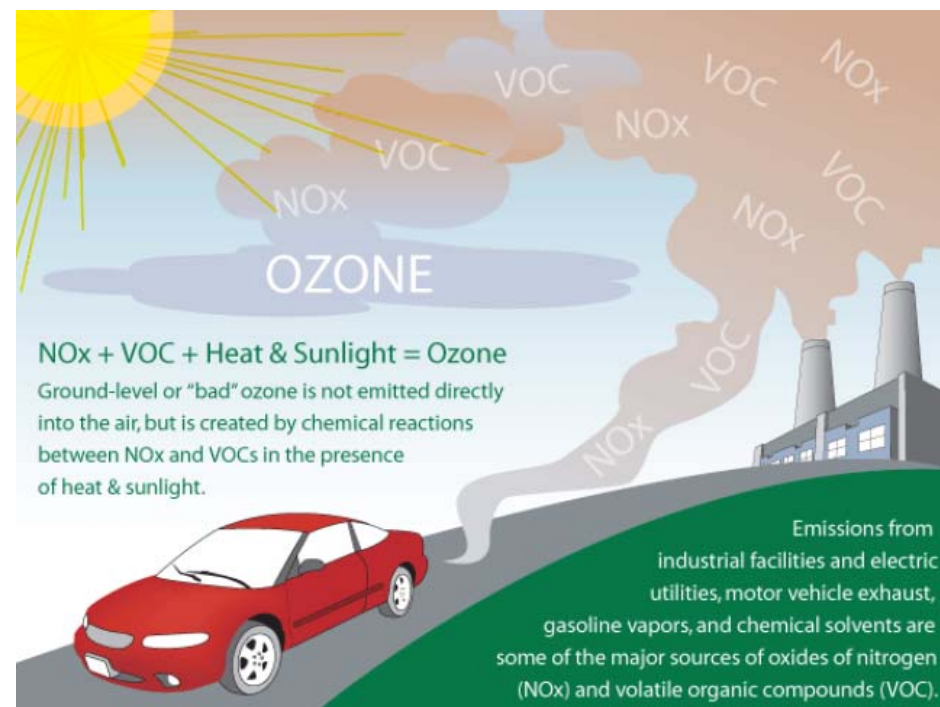
Methodology

Used a hybrid approach studying pre-pandemic trends and increase in teleworking

On-Road Mobile Emissions Reduction

Total Emissions Reduction Measure

- Cumulative estimated emission reductions, for all CMAQ funded projects, of each applicable criteria pollutant and precursor
- St. Louis region, the applicable criteria pollutants and precursors are only VOC and NO_x.
- **Units:** kilograms of each emission reduced per day (kg/day).



Emissions Reduction - 1st Performance Period

Total Emissions Reduction Performance (4-Year Target) - Illinois and Missouri

Pollutant	4-Year Target (2018-2021) Comparison to actual 4-Year Performance		
	4-Year Target (kg/day)	4-Year Reported (kg/day)	Target Met
Nitrogen Oxides (NO_x)	261.7	190	NO
Volatile Organic Compounds (VOC)	29.9	22.3	NO
Particulate Matter (PM_{2.5})	6.9	11	YES
Carbon Monoxide (CO)	201.9	335.5	YES

There were two engine replacement projects in Illinois that did not move forward during the reporting period due to Buy America waiver issues. These two projects would have made up the majority of the unrealized emissions reductions.

Missouri			
Pollutant	4-Year Target (2018-2021) Comparison to actual 4- Year Performance		
	4-Year Target (kg/da y)	4-Year Reported (kg/day)	Target Met
Nitrogen Oxides (NO _x)	195.7	183.1	NO
Volatile Organic Compounds (VOC)	24.6	20.4	NO
Particulate Matter (PM _{2.5})	4	10.9	YES
Carbon Monoxide (CO)	201.9	335.5	YES

Illinois			
Pollutant	4-Year Target (2018-2021) Comparison to actual 4- Year Performance		
	4-Year Target (kg/da y)	4-Year Reported (kg/day)	Target Met
Nitrogen Oxides (NO _x)	66	6.9	NO
Volatile Organic Compounds (VOC)	5.3	1.9	NO
Particulate Matter (PM _{2.5})	2.9	0.1	NO
Carbon Monoxide (CO)	n/a	n/a	n/a

Emissions Reduction – 2nd Performance Period Targets

Baseline Performance			
FFY 2018-2022 Criteria Pollutants and Applicable Precursors from CMAQ Public Access System	IL (kg/day)	MO (kg/day)	Total (kg/day)
Volatile Organic Compounds (VOC)	3.052	89.162	92.216
Nitrogen Oxides (NO _x)	0.311	16.457	16.775

The baseline uses only scheduled CMAQ funded projects that were scheduled and obligated during the performance period

Total Emissions Reduction Target			
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)	4-year Target (kg/day)
Nitrogen Oxides (NO _x)	143.483	9.671	143.483
Volatile Organic Compounds (VOC)	8.673	3.308	8.673

Missouri Target			
Emissions Reduction Measure	2- and 4- year Emission Reductions for each applicable criteria pollutant and precursor for all projects funded with CMAQ funds		
	Missouri FFY 2022-2025 CMAQ Program (kg/day)	2-year (kg/day)	4-year (kg/day)
Nitrogen Oxides (NOx)	142.004	8.836	142.004
Volatile Organic Compounds (VOC)	8.209	2.940	8.209

Illinois Target			
Emissions Reduction Measure	2- and 4- year Emission Reductions for each applicable criteria pollutant and precursor for all projects funded with CMAQ funds		
	Illinois FFY 2022-2025 CMAQ Program (kg/day)	2-year (kg/day)	4-year (kg/day)
Nitrogen Oxides (NOx)	1.479	0.836	1.479
Volatile Organic Compounds (VOC)	0.464	0.368	0.464



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