



Maryland
Department of
the Environment

Baltimore Ozone State Implementation Plan (SIP) Update

Interagency Consultation Group
January 4, 2023

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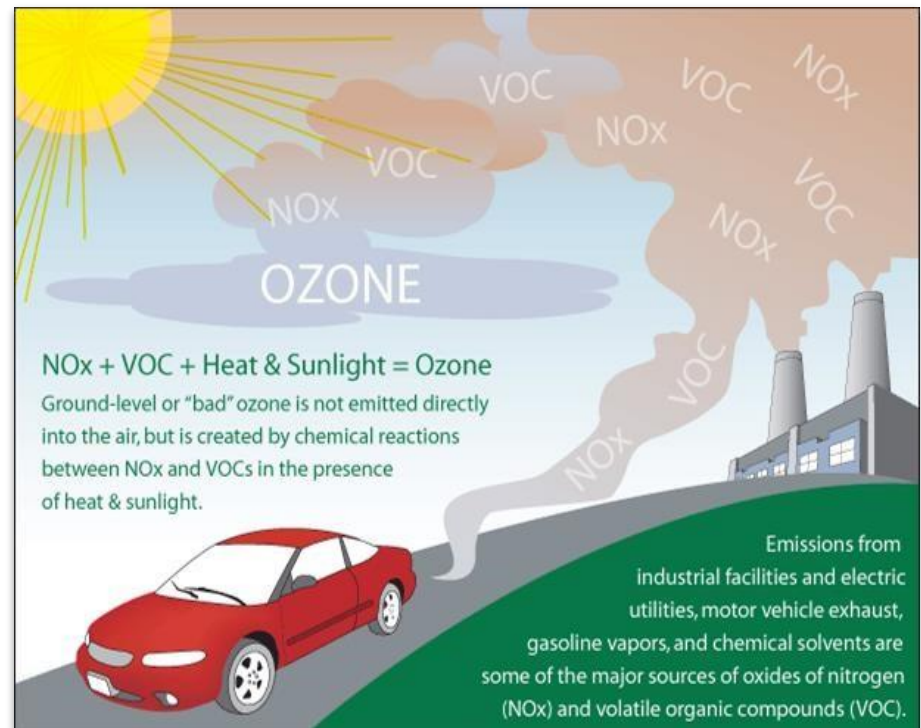


SIP Background

National Ambient Air Quality Standards (NAAQS):
federal standards for six Criteria Air Pollutants, including ground-level ozone

Ozone: gas composed of three atoms of oxygen,
main component of smog

→ SIPs explain how the state is going to attain or maintain the federal standards





EPA Actions

- Baltimore is currently in nonattainment of the 2015 ozone NAAQS of 70 ppb
- April 13, 2022:** The U.S. Environmental Protection Agency (EPA) proposed that the area be bumped up from “marginal” to “moderate”
- October 7, 2022:** EPA finalized the ruling
 - January 1, 2023:** Deadline for SIP submittal
 - August 3, 2024:** Attainment date
 - End of ozone season 2023:** Actual attainment date

Federal Register / Vol. 87, No. 71 / Wednesday, April 13, 2022 / Proposed Rules					21845
TABLE 1—2015 OZONE NAAQS MARGINAL NONATTAINMENT AREA EVALUATION SUMMARY					
2015 NAAQS nonattainment area	2018–2020 DV (ppm)	2015 NAAQS attained by the marginal attainment date	2020 4th highest daily maximum 8-hr average (ppm)	Area failed to attain 2015 NAAQS but state requested 1-year attainment date extension based on 2020 4th highest daily maximum 8-hr average ≤ 0.070 ppm	
Allegan County, MI	0.073	Failed to Attain	0.076	No.	
Amador County, CA	0.069	Attained	Not applicable	Not applicable.	
Atlanta, GA	0.070	Attained	Not applicable	Not applicable.	
Baltimore, MD	0.072	Failed to Attain	0.069	No.	
Berrien County, MI	0.072	Failed to Attain	0.078	No.	
Chicago, IL-IN-WI	0.077	Failed to Attain	0.079	No.	
Cincinnati, OH-KY	0.074	Failed to Attain	0.071	No.	
Cleveland, OH	0.074	Failed to Attain	0.075	No.	
Dallas-Fort Worth, TX	0.076	Failed to Attain	0.077	No.	
Denver Metro/North Front Range, CO	0.081	Failed to Attain	0.087	No.	
Detroit, MI	0.072	Failed to Attain	0.074	No.	
Door County-Revised, WI (Rural Transport Area (RTA))	0.072	Failed to Attain	0.075	No.	
Greater Connecticut, CT	0.073	Failed to Attain	0.071	No.	
Houston-Galveston-Brazoria, TX	0.079	Failed to Attain	0.075	No.	
Louisville, KY-IN	0.072	Failed to Attain	0.071	No.	
Manitowoc County, WI	0.070	Attained	Not applicable	Not applicable.	
Mariposa County, CA	0.079	Failed to Attain	0.091	No.	
Milwaukee, WI	0.071	Failed to Attain	0.077	No.	
Muskegon County, MI	0.076	Failed to Attain	0.080	No.	
Northern Wasatch Front, UT**	0.077	Failed to Attain	0.080	No.	
Pechanga Band of Luiseño Mission Indians***	0.078	Failed to Attain	0.084	No.	
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	0.074	Failed to Attain	0.071	No.	
Phoenix-Mesa, AZ	0.079	Failed to Attain	0.087	No.	
San Antonio, TX****	0.072	Failed to Attain	0.074	No.	
San Francisco Bay, CA	0.069	Attained	Not applicable	Not applicable.	
Sheboygan County, WI	0.075	Failed to Attain	0.076	No.	
Southern Wasatch Front, UT	0.069	Attained	Not applicable	Not applicable.	
St. Louis, MO-IL	0.071	Failed to Attain	0.074	No.	
Uinta Basin, UT	0.076	Failed to Attain	0.066	Yes.	
Washington, DC-MD-VA	0.071	Failed to Attain	0.065	No. ⁹	
Yuma, AZ	0.068	Attained	Not applicable	Not applicable.	



Moderate SIP Components

1. 2017 base year inventory
2. Reasonable Further Progress (RFP) for 2023
3. Reasonably Available Control Measures (RACM) analysis
4. Mobile source conformity and budgets
5. Contingency measures
6. Photochemical modeling showing attainment



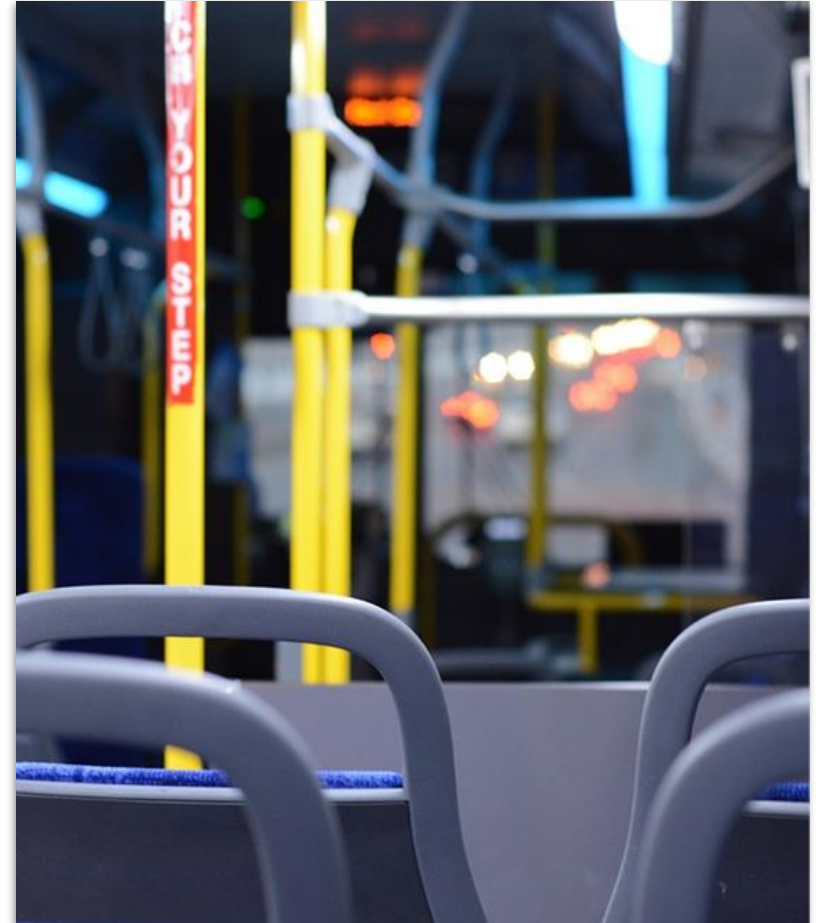
Transportation RACM Analysis: Background

- RACM = Reasonably Available Control Measures
- Section 172(c)(1) of the Clean Air Act:
“such plans shall provide for the implementation of all reasonably available control measures as expeditiously as practicable”
- A list of control measures that we must evaluate to see if the region can advance the attainment date



Transportation RACM Analysis: Process

- April - August 2022: MDE met with transportation stakeholders (Baltimore Regional Transportation Board (BRTB), Baltimore Metropolitan Council (BMC), and the Maryland Department of Transportation (MDOT))
- Started with >200 measures from previous RACM analyses
- Evaluated 92 measures against established criteria





Transportation RACM Analysis: Results

- None could be considered RACM
 - Measures would need to have advanced the attainment date to 2022
 - Could look at this list for reductions in the future

List #	Measure	Description	Advance Attainment Date?	Enforceable?	Technologically Feasible?	Economically Feasible?	No Adverse Impacts?	Reductions >0.1 tons per day?	RACM: Yes / No?	RACM: Explanation
M 13	Control Bus Emissions	Provide electrified parking spaces or APUs for tour buses.	No	No	Yes	Yes	No	No	No	Will not advance attainment date.
M 14	Discounted pre-paid transit fare instruments	Improve and promote method for employers to provide transportation vouchers (i.e., for alternatives to SOV), including expanding Commuter Choice Maryland to all public sector employees	No	No	Yes	–	Yes	–	No	Will not advance attainment date. No creditable emission reductions.
M 15	Free Transit Passes to Students	Free transit passes for high school and college students, subsidized by schools or through student registration fee.	No	No	Yes	–	Yes	–	No	Will not advance attainment date. No creditable emission reductions.
M 16	MTA College Pass Program	Expand Baltimore college bus fare program. Program allows students to receive reduced fares near 19 participating schools in the region.	No	No	Yes	–	Yes	–	No	Will not advance attainment date. No creditable emission reductions.
M 17	Discount Multi-Trip Bus Fares	Improve discount programs reducing cost of multiple bus rides through purchase of pass books.	No	No	Yes	–	Yes	–	No	Will not advance attainment date. No creditable emission reductions.



Supplementary or Innovative Measures

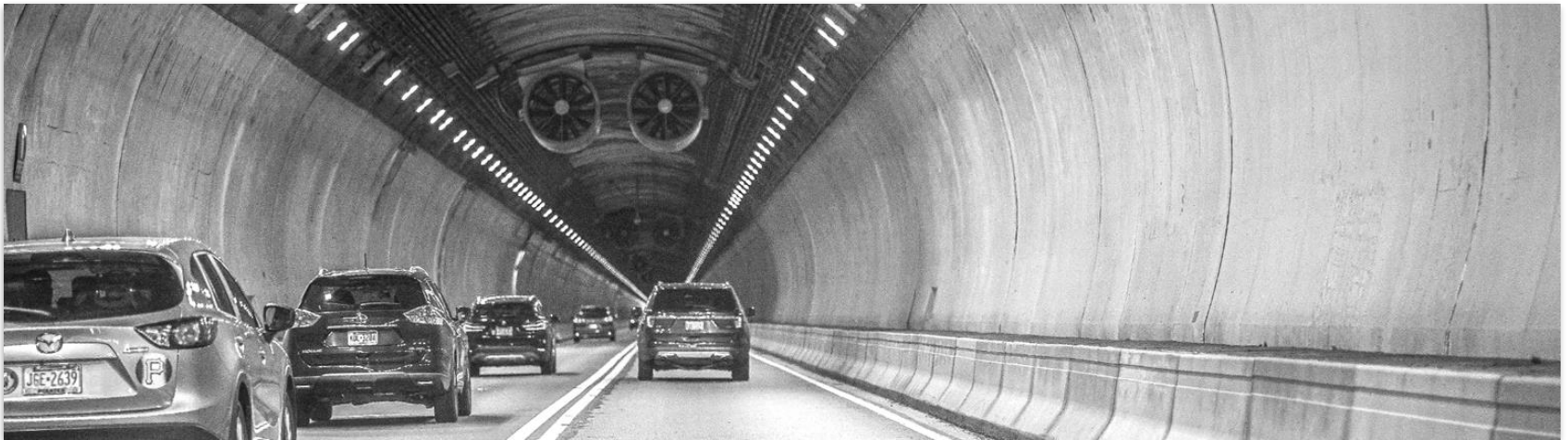


- MDOT provided a write up for the “Supplementary or Innovative Measures” section
- Showcases air quality improvements in the transportation sector without formally taking credit for them



Mobile Budgets: Process

- Coordinated with MDOT, BMC, Baker, and MDE Mobile Sources
- Baker/MDOT and BMC both ran models using MOVES3 for 2023, 2025, 2035, and 2045
 - MDOT used State Highway Administration data
 - BMC used their Baltimore region network





Mobile Budgets: Results

New Mobile Budgets***

Pollutant	MOVES3 Modeled Emissions	MOVES3 + Buffer
VOC (TPD)	17.12	17.47
NOx (TPD)	32.09	35.26

***These are not official numbers. They will only be official when EPA formally approves them.



Contingency Measures

- Measures that will automatically be implemented without further state or federal action if we receive notice of failure to attain
- Sierra Club v. EPA (Case No. 15-1465) vacated a provision allowing states to include already implemented measures as contingency measures
 - Now, a separate control measure must be developed that is “triggered” by failure to attain



Contingency Measures

Pollutant	MVEB	Contingency MVEB	Difference
VOC (TPD)	17.47	17.12	0.35
NO _x (TPD)	35.26	32.09	3.17
TOTAL			3.52
Reductions Needed for Contingency			3.5

- ✓ The regulation is a new measure not included in the SIP and therefore is not an already implemented enforceable measure
- ✓ The regulation provides a new federally enforceable emission limit/budget on a source category
- ✓ The regulation has a “trigger” mechanism consistent with contingency requirements



Current State of the SIP

- Nothing is set in stone until there's formal action from EPA
- Rough drafts were sent to EPA in November and December for initial comments
- [Public hearing notice](#):
 - Comment period: December 27, 2022 – January 31, 2023
 - Hearing: January 31, 2023 at 10:00 a.m. online
- Pushing for official SIP submittal ASAP