

Short-term Measures to Reduce Emissions and Air Quality Risks in the Washington DC Metropolitan Area

Maryland's Shrinking Ozone Problem

2000

2010

2020

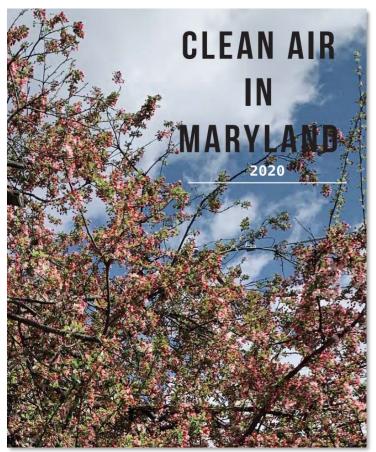
MWAQC TAC Special Meeting April 12, 2022

Tad Aburn, Director, Air and Radiation Administration
Catherine Salarano, Natural Resources Planner, Air and Radiation Administration



Overview of Presentation

- Why we should continue to reduce emissions
- The goals of MWAQC TAC
- The importance of local governments
- The "low-hanging" control measures
 - Eliminate/reduce illegal vehicle tampering
 - Eliminate/reduce illegal truck idling
 - Eliminate/reduce illegal fugitive dust
 - Push energy sources to maximize emissions reductions on the worst ozone days
- Looking at the Cheverly-MDE Partnership as an example



https://mde.maryland.gov/programs/Air/Pages/index.aspx



Air Quality History: The Ugly

- The 60's a real mess
- Significant air quality events and disasters, such as those in Denora, PA in 1948 and in New York City in 1953, 1963, and 1966
- Prompted Congress to enact the Clean Air Act (CAA) in 1970

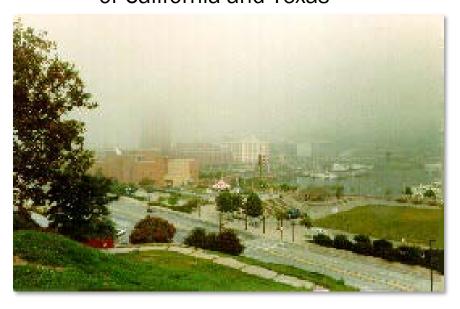


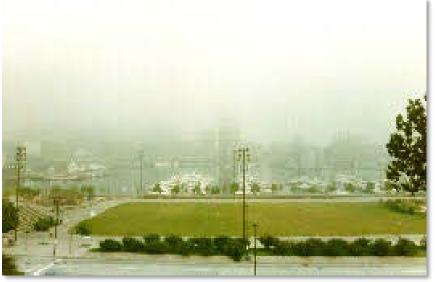




Air Quality History: The Bad

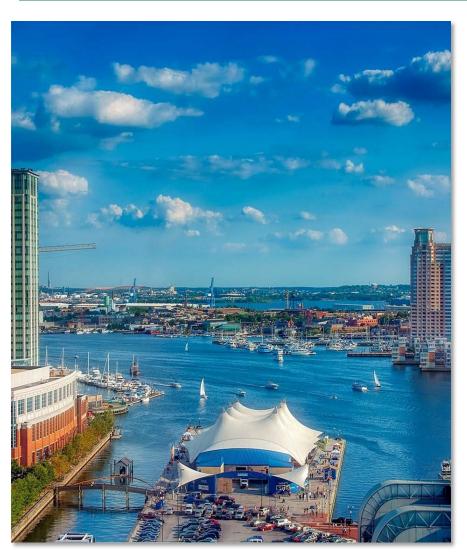
- Up until around 2010, Maryland continued to experience numerous very bad air quality events with ground-level ozone and particulate matter levels in the unhealthy to very unhealthy range
 - 2005 MIT PM Study Maryland identified as the riskiest place to breathe the air east of the Mississippi
 - 2008 EPA designates the Baltimore area as the worst ozone area outside of California and Texas







Air Quality History: The Good

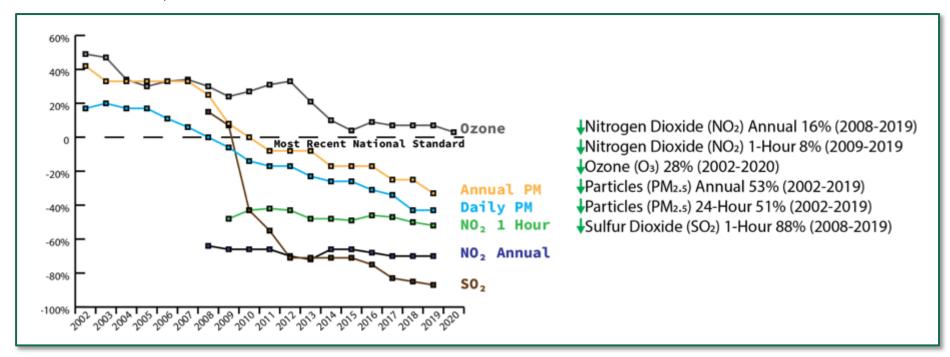


- Achieved the federal fine particle standard and the 2008 ozone standard
- Moving towards achieving the more stringent 2015 ozone standard
- 2020: fewest number of bad ozone days ever recorded in a year



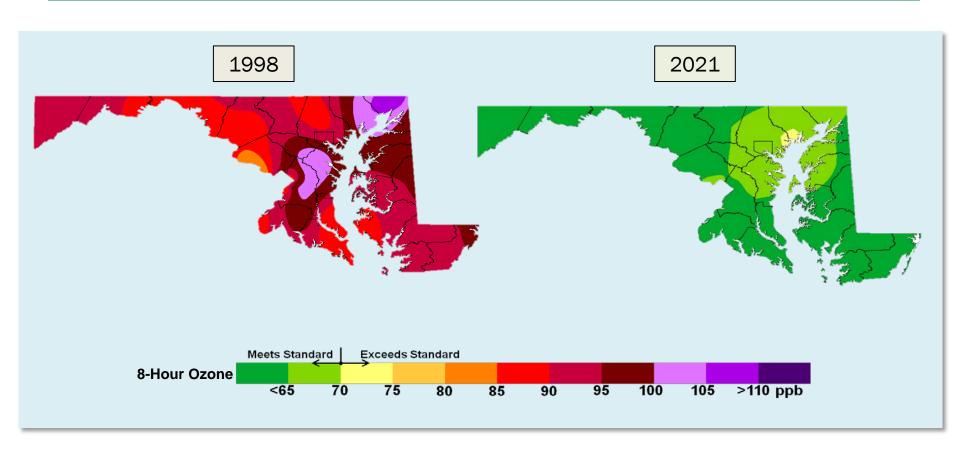
Maryland's Progress Towards Clean Air

- Maryland's air quality has dramatically improved over the past 30 years
- Air quality policies and regulations have lowered levels of six common pollutants — particulate matter, ozone, lead, carbon monoxide, nitrogen dioxide, and sulfur dioxide





The Shrinking Ozone Problem



- ✓ Significant spatial risk reduction ✓ Lower ozone levels



The Push for More Emissions Reductions

- The DC area is very close to meeting all federal air quality standards
- Possible future concerns:
 - The health science says the standards need to be strengthened –
 this will happen over the next 2 to 3 years
 - Significant risks to the regions most vulnerable persist, even when in compliance with current standards
 - Many times, these vulnerable residents live in communities that are overburdened, often low-income communities of color (often referred to as environmental justice communities)

When there are common sense, low-cost efforts to reduce emissions, reduce risk, and get the region closer to future standards...

We should work to implement them!



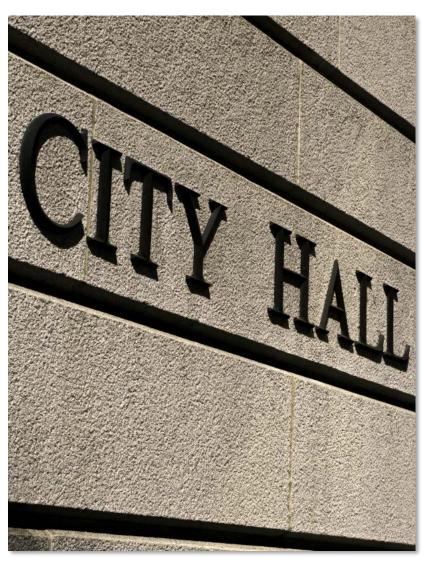
The Goals of MWAQC TAC

- Over the past two months, MWAQC TAC and MWAQC have discussed additional emission reductions
- MWAQC TAC Chair proposed that MWAQC give MWAQC TAC a specific charge to begin the process of identifying and implementing new "shortterm" emission control programs to better protect the health of the regions most vulnerable residents
- After discussion with COG and MWAQC leadership, it was decided:
 - A specific charge was not needed because TAC already had the authority to do this
 - A report on how to begin this effort would be provided to MWAQC in the early summer of 2022





The Importance of Local Governments



- MWAQC is a unique organization where state and local governments are working in partnership to clean the air in the metropolitan Washington DC area
- Local governments can have a huge impact on these "low-hanging" emission reduction measures
- Emission reduction opportunities are now with more local, small disperse sources like body shops, car dealers, auction houses, areas where trucks idle, construction sites, warehouse areas, etc.
- Local government is more familiar with their local sources and pollution areas than the state



The "Low-Hanging" Control Measures

- These measures can generate significant emission reductions and are important to protect sensitive individuals in environmental justice areas
 - Eliminate/reduce illegal vehicle tampering
 - Eliminate/reduce illegal truck idling
 - Eliminate/reduce illegal fugitive dust
 - Push energy sources to maximize emission reductions on the worst ozone days
- All of these efforts have an enforcement and an education/outreach component
- MDE has been working in the Cheverly area in partnership with the Town to implement some of these measures
- Just a little on the control measures today COG is working on more detailed "training style" workshops for the future







Larry Hogan, Governor Boyd Rutherford, Lt. Governor

Ben Crumbles, Secretary Horaclo Taplada, Deputy Secretary

COMPLIANCE ALERT! – March 2022

Updates to COMAR 26.11.20.02 will effect vehicle dealers

New Restrictions on sales of motor vehicles with tampered or removed exhaust emissions control systems

New record keeping requirements for all sales by dealers

- Effective February 7, 2022 the Maryland Department of the Environment has expanded the anti-tampering regulations to prohibit sale, offering for sale, lease, auction, or transfer of a motor vehicle with an air pollution control system that has been tampered or removed.
- Vehicle dealers or business that sell, auction, or transfer motor vehicles must maintain records including a statement that all air pollution control systems were in place and in operating condition at the time of sale.
- The Department or its agents have the right to conduct inspections of motor vehicles and records at vehicle dealers.
- Dealers or business that sell, auction, or transfer motor vehicles with tampered emissions systems such as disabled Diesel Exhaust Fluid (DEF) systems, removed catalytic converters, removed Diesel Particulate Filters (DPF), removed exhaust gas recirculation (EGR) systems, or installed engine "tuners", "chips", "6 position switches", or similar devices may be subject to penalties of up to \$25,000 per day.

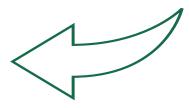
More information available online

http://www.dsd.state.md.us/comar/subtitle_chapters/26_Chapters.aspx

https://mde.maryland.gov/programs/air/MobileSources/Pages/Anti-Tampering.aspx

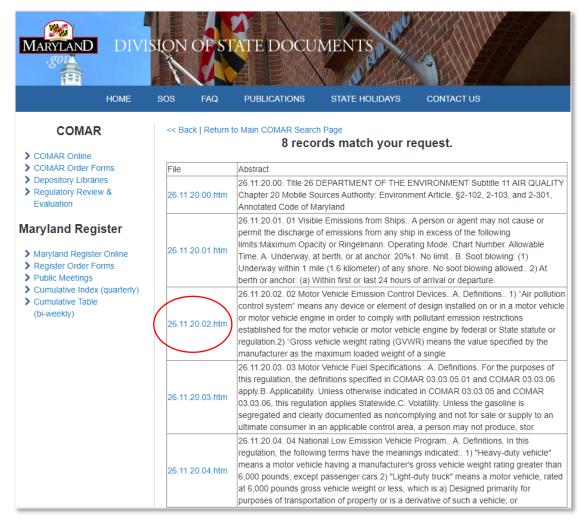
Questions? Email mde.tampering@maryland.gov

Compliance Alert: Illegal Tampering



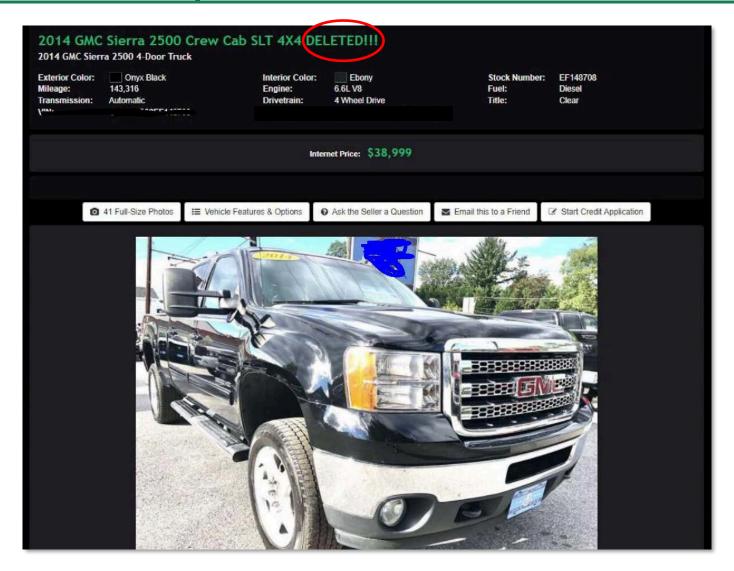


Recently Adopted Anti-Tampering Regulation



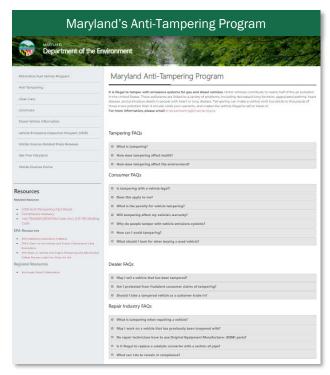


Yes...Folks Actually Advertise Tampered Vehicles on the Web

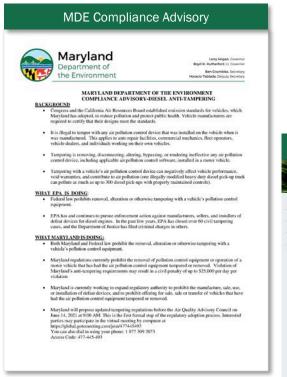




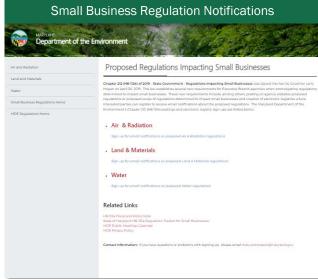
More Info on Anti-Tampering



https://mde.maryland.gov/programs/Air/MobileSources/Pages/Anti-Tampering.aspx



https://mde.maryland.gov/programs/Air/MobileSources/Documents/Anti--Tampering/MDE%20Diesel%20Compliance%20Advisory.pdf



https://mde.maryland.gov/programs/Regulations/HB1124/Pages/index.aspx





Larry Hogan, Covernor Boyd K. Rutherford, Lt. Covernor

Ben Grumbles, Secretary Horacio Tablada, Deputy Secretary

November 2021

Re: Compliance Advisory - Diesel Truck Idling and Fugitive Dust Emissions

To whom it may concern:

Since June of 2021, the Maryland Department of the Environment (MDE) Air and Radiation Administration has been running a targeted inspection program in and around the town of Cheverly. This effort is a partnership among community members, MDE, and academia to address concerns in a community that is subjected to a heavy environmental burden from a number of sources of air pollution. The project involves using information gathered from a dense network of 22 local air monitors spread throughout the community to help determine potential pollution hotspots and what type of activities may be contributing to those hotspots.

As part of the targeted inspection effort, MDE observed numerous instances of diesel truck idling that may be violations of Maryland's anti-idling law. In Maryland, drivers are not legally allowed to idle longer than five minutes unless they meet certain exemptions. Idling emits pollutants that impact air quality, the health of community residents and the environment. Idle reduction is a very high priority as diesel particulate is a highly toxic air pollutant and hinders the state's ability to achieve the federal ambient air quality standards.

Please work with the personnel in charge of your operations to make sure that any idling associated with your operations is in compliance with state law. MDE will continue to target the Cheverly area and partner with the Maryland Department of Transportation and the Maryland State Police to ensure compliance with state law as well as address any illegal idling that may be occurring.

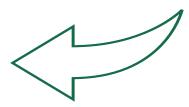
During this summer's targeted inspection program, MDE also issued several Notices of Violation (NOVs) of MDE's fugitive dust regulations on several hot, dry days in July 2021. To ensure reasonable precautions are being taken to control fugitive dust so that it is not impacting the Cheverly community, MDE will continue to maintain an inspection presence in the Cheverly area over the next year. This initiative will commence over the winter months, but since dust emissions often ramp up in the warmer months, the initiative will continue into next summer. MDE's goal for this initiative is for sources to put effective controls in place to eliminate the potential for dust events.

A list of websites with additional information on these programs is enclosed. If you have any questions about this project or information, please email MDE at mdeair.othercompliance@maryland.gov.

Sincerely,

George S. (Tad) Aburn, Jr., Director Air and Radiation Administration

Initial Compliance Advisory Illegal Idling and Fugitive Dust





Larry Hogan, Covernor Boyd K, Rutherford, Lt. Covernor

Ben Grumbles, Secretary Horacio Tablada, Deputy Secretary

March 2022

COMPLIANCE ADVISORY - ILLEGAL IDLING

To whom it may concern:

The Maryland Department of the Environment (MDE), the Maryland Department of Transportation (MDOT) and the Maryland Department of State Police (MSP) are working in partnership to eliminate illegal idling. Maryland's law regarding the maximum period of idling can be found in the Maryland Transportation Article. Section 22-402(c)(3). In general, drivers are not legally allowed to idle longer than five minutes unless they meet certain exemptions such as vehicles that operate auxiliary equipment installed on the vehicle and when mechanical difficulties occur over which the operator has no control. The joint effort by MDE, MDOT and MSP will initially focus on areas where there are many idling diesel vehicles. These areas are often in communities that are overburdened with many stationary and mobile sources emissions and concerned over environmental justice.

Emissions from idling diesel vehicles are linked to numerous negative health effects including respiratory illness and cancer. Further, controlling idling will also lessen air pollution, help fight climate change and decrease pollution of the Chesapeake Bay. Complying with the idling requirements can also minimize fuel usage.

We are asking for your help. Please turn off your engines to eliminate unnecessary idling. Five minutes matters.

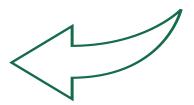
For more information and tips on idle reduction, please visit the MDE's Idle Free MD web page at mde.maryland.gov/idlefreeMD or call the MDE compliance assistance line at 410-537-3270.

Thank you for your attention to this important issue.

George S. Aburn, Jr.

George S. (Tad) Aburn, Jr., Director Air and Radiation Administration Maryland Department of the Environment

Recent Compliance Advisory Illegal Idling





MDE's Idle Free Maryland Website



https://mde.maryland.gov/programs/air/MobileSources/idlefreeMD/Pages/index.aspx

- Free outreach resources online
- Quick walkthrough

IdleFree MD Toolkit

The Idle Free MD toolkit materials below are available for anyone to use and free of copyright restrictions.

- Resources for Maryland Communities
 - Logos
 - Social Media
 - Fliers and Posters
- Resources for Transportation Industries
 - o Fliers
- · Resources for Schools
 - Presentation
 - · Fliers
 - · Letters and Documents
 - Signs and Decals





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Please work with the personnel in charge of your operations to make sure that any idling associated with your operations is in compliance with state law. MDE will continue to target the Cheverly area and partner with the Maryland Department of Transportation and the Maryland State Police to ensure compliance with state law as well as address any illegal idling that may be occurring.

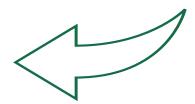
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Initial Compliance Advisory Illegal Idling and Fugitive Dust



State of Maryland Department of the Environment

Air and Radiation Management Administration

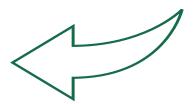
1800 Washington Boulevard, Suite 715 Baltimore, MD 21230-1720

Notice of Violation of Air Pollution Regulations*

	Date of Notice:	
Name of Responsible Person or	Company:	
Address:		
		County:
You are hereby notified that you Maryland.		Air Pollution Control Regulations of the State of
The specific regulations violated	are COMAR	,
COMAR	, and COMAR	. The circumstances are as follows:
Source of Pollution:		
Estimated Wind Speed:		ion:
<u>Gode</u> , Environment Article, §2- up to \$25,000 for each day of vio	101 <u>et seq.,</u> and the regulations ado plation and to criminal penalties. Se	ations of the Maryland Air Quality Act, <u>Maryland</u> opted under the Act are subject to civil penalties of the Environment Article, Title 2, Subtitle 6.
If you have any questions about	this Notice, please contact me. -	
	-	Telephone Number

* Form ARMA-20B should be used for most nuisance cases. ARMA_CMP_LB2 5/19/06

Formal Notice of Violation (NOV)

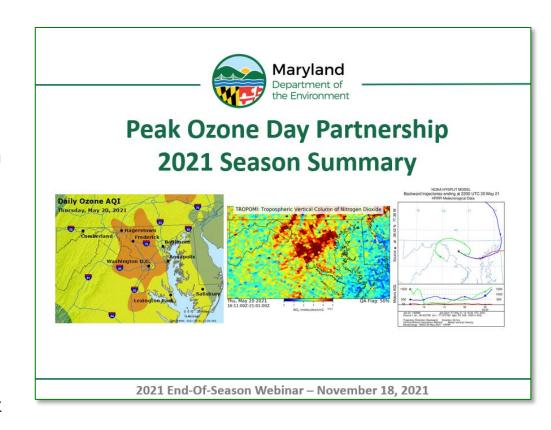






Peak Ozone Day Partnership

- Driven by the science of ozone formation and existing forecasting program
 - Forecasting process already coordinated by MWCOG
- Simply pushes high electricity demand day energy generation units to minimize emissions on the worst ozone days
- Baltimore focused effort since 2017
- MDE would like for it to be implemented in the DC area
 - Notices and forms are already developed and ready to be sent out
 - Primarily implemented by MWCOG staff
 - Possible workshop with COG staff in the future



Peak Ozone Day Reduction Partnership Program Multi-Day Advance Notice

High Ozone Expected Soon!

Thank you for your participation in MDE's 2021 Peak Ozone Day Reduction Partnership Program designed to reduce nitrogen oxide (NOx) emissions and lower ozone levels on peak ozone days.

Forecast conditions indicate rising ozone concentrations are expected to develop and an ozone air quality exceedance may occur in Maryland on [insert day, date]. Advance forecasts generally provide a good indication that an air quality exceedance may occur. 3-day public forecasts can be found on the MDE website at:

http://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/index.aspx

As part of this program, please begin thinking about implementing the measures described below to minimize emissions on and before the forecast exceedance day.

Please optimize current NOx emission control technologies to minimize NOx emissions and make all other reasonable efforts to reduce NOx emissions. If feasible, do not run units during peak ozone days or switch to cleaner units.

For your units subject to the emission reduction optimization requirements of COMAR 26.11.38.03A(2), please make all reasonable efforts to run at rates that are at or below the indicator rates listed at COMAR 26.11.38.05A(2).

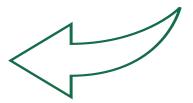
For Curtailment Service Providers (CSPs), do not advise clients to test or operate on-site generators, unless there is a true energy emergency. Advise clients to take any other reasonable actions that can be performed to reduce NOx emissions.

MDE will issue a Call to Action if the forecast continues to indicate that an air quality exceedance is likely to occur. Any additional efforts to minimize TOTAL NOx emissions prior to the anticipated exceedance day would be greatly appreciated.

If you have any questions about the Peak Ozone Day Reduction Partnership Program contact Randy Mosier at 410-537-4219 or randy.mosier@maryland.gov.

Please do not respond directly to this e-mail. The originating e-mail account is not monitored.

Call-to-Action Notice sent <u>4-5 days before</u> an ozone air quality exceedance event



Peak Ozone Day Reduction Program Call-to-Action Notice

Curtail NOx Emissions Tomorrow if Possible!

Thank you for your participation in MDE's 2021 Peak Ozone Day Reduction Partnership Program designed to reduce nitrogen oxide (NOx) emissions and lower ozone levels on peak ozone days.

An ozone air quality exceedance day is forecast to occur in Maryland tomorrow, [insert day, date]. As requested, MDE is asking you to take all reasonable steps to minimize NOx emissions. Taking actions to minimize NOx emissions the day before and the day of a predicted ozone exceedance helps to reduce the possibility of poor air quality occurring in the region.

At a minimum, MDE is asking you to consider implementing the measures described below:

Please optimize current NOx emission control technologies to minimize NOx emissions and make all other reasonable efforts to reduce NOx emissions. If feasible, do not run units during peak ozone days or switch to cleaner units.

For your units subject to the emission reduction optimization requirements of COMAR 26.11.38.03A(2), please make all reasonable efforts to run at rates that are at or below the indicator rates listed at COMAR 26.11.38.05A(2).

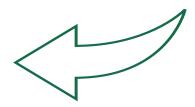
For Curtailment Service Providers (CSPs), do not advise clients to test or operate onsite generators, unless there is a true energy emergency. Advise clients to take any other reasonable actions that can be performed to reduce NOx emissions.

Any efforts to minimize TOTAL NOx emissions would be greatly appreciated.

MDE kindly requests a summary report in Excel format the day following each Call to Action. In the report, please submit the hourly operating data for each Call to Action Day including: hourly averages of NOx Rate, MWg generated (as applicable), Heat Input (MMBTU), and urea injection rate (as applicable). Please also provide the daily NOx tons emitted. Note any special actions taken to minimize NOx emissions and note any malfunctions impacting NOx emissions during Call to Action days. If possible, include the anticipated reduction in NOx emissions attributable to actions taken. For CSPs, please indicate that clients were not called to test or operate on-site generators. If on-site generators operated, provide reason, hours of operation and the tons of NOx generated during the event

Information may be sent to Susan Nash at susan.nash@maryland.gov. If you have any questions about the Peak Ozone Day Reduction Partnership Program contact Randy Mosier, MDE 410-537-4219 or randy.mosier@maryland.gov.

Call-to-Action Notice sent the day before an ozone air quality exceedance event







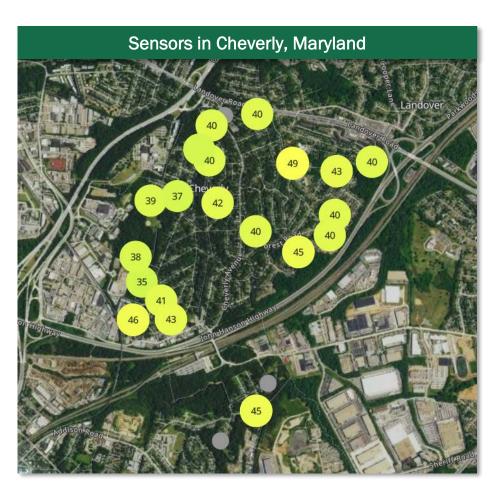
Introduction to the Partnership

- In 2019, Dr. Sacoby Wilson and the University Maryland's Center for Community Engagement, Environmental Justice, and Health (CEEJH) initiated a partnership with the Town of Cheverly to build a hyper-local air monitoring network in and around the Cheverly area
- MDE joined this partnership and in 2021 ran a targeted inspection program (up to 6 sources and area wide scans each day, 3 days a week for 2 months)
 - The effort used air monitoring data and wind data to target inspections at multiple stationary and mobile sources
- MDE provided the Community with a report on this effort. The report included 10 recommendations on how MDE and the Community could work together to improve air quality in the area
- Many of those recommendation are now being implemented



Background on the Area

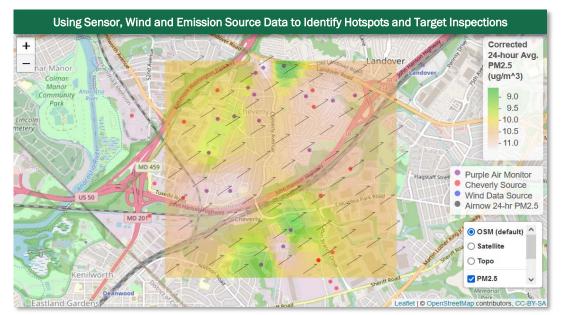
- Just outside of D.C. in Prince George's County in an area with concerns over environmental justice
- Numerous stationary sources, major highways, and other emissions sources around the Sherriff Road area
 - Generally upwind of populated areas
- An area where MDE receives many complaints about air pollution
- Also downwind of the D.C. area air pollution plume





A Closer Look at the Study

 Community-wide area monitoring/sensor network made up primarily of PurpleAir fine particle units



https://mde.maryland.gov/programs/Air/AirQualityCompliance/Pages/CheverlyTargetedInspectionInitiative.aspx

- Intensive inspection efforts in June and July of 2021
 - Several meetings with community
 - Uses sensor, wind and source data, citizen input, and other information to target inspections
 - Area-wide surveillance and source specific inspections 3 or more days each week
 - 28 days of inspections –
 many site visits → 3 NOVs
 - Web page summarizes daily activity and inspection reports



Current MDE Activities in the Cheverly Sherriff Road Area

- MDE, working in partnership with the community and UMD, is implementing several of the recommended follow up activities
 - Diesel cleanup
 - Eliminating or reducing illegal idling
 - Eliminating or reducing illegal tampering
 - Reducing fugitive dust
 - Continuing the targeted inspection and enforcement effort started in 2021
- Several of these are very appropriate for implementation across the Washington DC ozone nonattainment area





Illegal Vehicle Tampering: Enhanced Enforcement and Outreach

- Major issue in recent years
 - The impacts of vehicle tampering on emission was not understood, even just 5 years ago
- Started with the Federal Government action against Volkswagen
- Now focusing on more local tampering at auto-body shops, dealers, auction houses and other businesses
- Major emission reductions associated with eliminating or reducing this activity
- Another area where outreach, education, and compliance advisories can drive emission reductions almost immediately



Illegal Vehicle Idling: Enhanced Enforcement and Outreach

- Reducing diesel emissions may be the single most important action linked to cleaner, healthier air in Cheverly
- Certain types of idling are illegal under Maryland, DC and VA law
- MDE has already been conducting area-wide inspections and distributing compliance advisory materials to businesses where illegal idling may be occurring
- A Partnership with the Maryland Department of Transportation and the Maryland State Police has already been formed to help implement this initiative
 - Joint inspections are ongoing
- Early outreach, education, and compliance advisory efforts can really start to reduce emissions before any compliance actions are ever taken



Fugitive Dust:

Enhanced Inspections, Enforcement, and Outreach

- This issue is already underway in several areas in Maryland via MDE Air Compliance Enforcement staff
 - One of the most common complaints we get is fugitive dust
- MDE already started to implement this initiative in 2021 in some areas
 - Much more frequent area-wide observations, site inspections
 - Compliance advisories distributed
 - Three Notices of Violation have already been issued by MDE
- Includes dust from permitted emission sources
- Also includes non-traditional emission sources like construction sites and warehouse businesses and areas
- Significant benefit can be achieved with just early outreach



Blends with Existing Partnership Efforts in the Cheverly Area

The Five Additional Clean Air Opportunities Identified in the October 2021 MDE Report on the Cheverly Partnership

- Cumulative impact monitoring supersites
 - MDE-led grant application (with Cheverly as a partner) has been submitted
- Discussion with local plant owners and operators with emissions
- Partnership with MDE, MDOT, and PG County on transportation projects
- School-based programs, like the "Idle Free MD" program
- Partnership with MDE and local members of the Metropolitan Washington Air Quality Committee (MWAQC) on programs to reduce the air pollution plume from the DC metropolitan area that impacts the Cheverly area



Is a Theme Emerging? A Key Role for Local Government

- All these efforts involve numerous disperse local emission sources
 - Areas where trucks idle
 - Areas where fugitive dust is an issue
 - Local sources where vehicles are repaired and sold
- Local government knows their local areas much better than the state
- Local government is also anxious to work with local businesses to make sure environmental issues are well understood
- These are the two big areas where it would be great to have local government partners help in these efforts
 - Finding the sources
 - Helping with the education, outreach, and compliance advisory processes



Discussion

Thoughts?
Questions?
Any interested counties or municipalities?

More workshops to come on this topic and other issues

Discussion

A partnership on illegal idling?

A partnership on illegal tampering?

A partnership on fugitive dust?

Implement the Peak Day Partnership Program in DC?