



Maryland
Department of
the Environment

Enhanced Monitoring - A Maryland Perspective

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Background

- In October 2015 when the Ozone NAAQS was revised to 70 ppb, the Ozone Monitoring Rule was also revised.
- Requires states with Moderate and above nonattainment areas and states in the Ozone Transport Region to develop and implement an Enhanced Ozone Monitoring Plan.
- Must be submitted to EPA no later than October 1, 2019.



What Is Enhanced Monitoring?

From 40CFR Part 58, Appendix D, 5.(h)

- Additional ozone monitors beyond the minimum requirements.
- Additional NO_x or NO_y monitors above minimum requirements.
- Additional VOC measurements beyond minimum requirements.
- Upper air measurements of meteorology or air pollution concentrations.





Why Would You Want To Do It?

- Surface based monitoring alone cannot determine the nature and origin of your particular ozone problem.
- To produce policy relevant science that will aid in the development and tracking of effective control strategies.
- Evaluate model performance (CMAQ & CAMx), identify weaknesses or areas needing improvements.
- Assist in ozone forecasting.
- EPA requires you to.



Maryland's Enhanced Monitoring Examples

Approaches Utilized

- Continuous
 - Mountaintop monitoring
 - Radar Wind Profilers (RWPs)
- Seasonal/Episodic
 - Ozonesondes
 - LIDAR- Aerosol & Ozone
 - Aircraft
 - Portable Ozone Monitor (POM) for Land/Water Interface
- Short-term Intensive Studies
 - Once in a blue moon





How much does this stuff cost?

Supported through extramural funding sources

- 3 Radar Wind Profilers
 - ~\$45,000 per year for service contract after initial investment
- Ozonesonde launches
 - ~\$50,000 per ozone season
- LIDAR - Aerosol
 - ~\$30,000 per year
- LIDAR – Ozone
 - ~\$75,000 - \$100,000 per ozone season
- Aircraft flights
 - ~\$50,000 per ozone season
- Intensive Studies like DISCOVER-AQ
 - Multi-million \$
- Portable ozone monitor
 - ~ \$20,000





Future Plans

- MDE plans to continue our existing enhanced monitoring activities.
- Possible coordinated effort to develop an enhanced monitoring plan as a MARAMA effort or some other multi-state/multi-region/or OTR-wide umbrella plan.