

2016 ANNUAL REPORT



Helping Members Improve Air Quality

A voluntary association of ten state and local air pollution control agencies, MARAMA strengthens the skills and capabilities of member agencies and helps them work together to prevent and reduce air pollution impacts in the Mid-Atlantic Region.

This report highlights our accomplishments from October 2015 through September 2016.

Mid-Atlantic Regional Air Management Association, Inc.
8600 LaSalle Road, Suite 636
Towson, Maryland 21286

Phone: 443-901-1882
Email: Marama@marama.org
www.marama.org

The Mid-Atlantic Diesel Collaborative: Celebrating 10 Years

The Mid-Atlantic Diesel Collaborative's 10th Anniversary Meeting on May 4, 2016 brought MDC members to Wayne, Pennsylvania for an educational event that reviewed the region's diesel emission reduction successes and planted seeds for future programs. EPA Region III Administrator Shawn Garvin expressed appreciation for work to improve air quality in the region, and he urged the group to continue to find ways to increase voluntary participation in emission reduction programs. Stakeholders from throughout the region engaged in meaningful dialogue and learned about diesel emission reduction opportunities.



EPA Region III presented MARAMA an award recognizing our 10 year productive partnership with the Mid-Atlantic Diesel Collaborative. Carol Febbo, Associate Director of Air Partnership Programs congratulated MARAMA on "a decade of action - working together for cleaner air."

Increasing Shipping Traffic Emphasizes Need to Reduce Diesel Emissions

A \$5 billion expansion of the Panama Canal was completed in June 2016. The wider, deeper Canal now handles much larger ships. East coast ports offer shippers lower cost access to much of the interior US, and traffic through our region is increasing. Supersized ships coming through the Canal began arriving at ports in New York/New Jersey, Maryland, and Virginia in July 2016. The increase in truck traffic serving the region's ports means MARAMA's dray truck replacement programs serving ports throughout our region are even more important for good air quality.

MARAMA state and local agencies work with regional ports to reduce diesel emissions. In December 2015 the Maryland Department of the Environment and the Maryland Port Authority agreed to reduce emissions at the port of Baltimore. The Port of Virginia's Green Operator program is one of the country's most successful



Large capacity cranes at the Port of Baltimore

Volkswagen Settlement Initiated

Scientists from West Virginia University Center for Alternative Fuels, Engines, and Emissions helped discover the biggest violation of the Clean Air Act by an auto maker. The scientists compared real road diesel emissions to lab emission testing. They used a portable emissions measurement system to prove VW cars dramatically exceeded US and European emissions limits in real-road conditions. The excess NOx emissions were as high as 40 times the federal standard for 2.0L diesel vehicles and nine times the federal standard for 3.0L diesel vehicles.

On July 6, 2016 the Department of Justice published a Notice of a Partial Consent Decree to address the company's illegal use of emission control "defeat devices" on nearly 500,000 2.0 liter diesel vehicles model year 2009 through 2015. Under terms of the Settlement, VW will provide up to \$10 billion to owners and lessees of VW and Audi 2.0 liter diesel cars that VW falsely claimed had low levels of harmful emissions. VW will also pay \$2.7 billion into a Trust to support programs to reduce diesel emissions, including programs MARAMA states will design.

MARAMA Diesel Projects Active in FY 2016

Early Replacement: Trucks replaced with model year 2008 or newer

Owners replaced twenty dray trucks serving Delaware, Pennsylvania, and Virginia ports under MARAMA DERA 2014 and VA DERA 2014 grants.

Construction Engine Rebuilt:

One construction equipment engine used in the Pittsburgh area was rebuilt under MARAMA's grant from the Allegheny County Health Department.



MARAMA hosted three Mid-Atlantic Diesel Collaborative webinars:

Heavy-Duty NOx Controls—Cost Effectively Reducing Ozone & Green House Gas (Dec 2015)

Heavy Duty Technologies' Role in Meeting Future Emission Reduction Goals (Mar 2016)

Assessing the Air Quality Impact of Vessels and Port Activity at the Port of Savannah's Garden City Terminal (Sept 2016)

Valuable Training Opportunities

In fiscal year 2016, MARAMA organized numerous training events to help member agency staff understand pollution control requirements and monitoring methods. MARAMA hosted eleven in-person courses and two workshops.

- NACT 334 **Permitting Practices and Principles** - 26 participants attended in Baltimore, MD
- **FTIR Stack Testing Method 320 and ASTM Method D6348** - 15 participants attended in Trenton, NJ
- APTI 455 **Inspection of Gas Control Devices and Selected Industries** - 38 participants attended in Richmond, VA
- **MARAMA Monitoring Committee Training Workshop** - 61 participants attended in Towson, MD
- APTI 452 **Principles and Practices of Air Pollution** - 38 participants attended in Raleigh, NC
- **MARAMA Clean Power Plan Training Workshop** - 40 participants attended in Wayne, PA
- NACT 350 **Basic Inspector Training** - 26 participants attended in Norristown, PA
- **Introduction to State Implementation Planning** - 47 participants attended in Philadelphia, PA
- NACT 290 **MACT General Background Information** - 31 participants attended in New Castle, DE
- NACT 271 **Stationary Reciprocating Engines** -21 participants attended in New Castle, DE
- NACT 273 **Industrial Boilers** - 25 participants attended in New Castle, DE
- NACT 272 **Stationary Gas Turbines/Power Plants** - 21 participants attended in New Castle, DE
- NACT 355 **Advanced Inspector Training** - 29 participants attended in Richmond, VA

MARAMA hosted ten on-line webinars with 941 participants. Webinar topics included:

- Introduction to Air Quality Modeling
- A Brief Introduction to the Clean Air Act
- How to Use Excel Pivot Tables
- Showcase of Projects Using the Emissions Modeling Framework
- MySQL and MOVES
- MARAMA Training Program Overview
- Yale and JHU SEARCH Project
- Oil and Gas Storage Vessel Inspection and Enforcement Strategies
- Forecasting Future Electric Generating Unit Emissions Using the ERTAC Tool



MARAMA's Training Coordinators Jackie Burkhardt and Sue Dilli and Administrative Assistant Sharon Ray

MARAMA also helped sixty-five members travel to attend fourteen national and regional conferences or meetings.

“This course pulled together the various components of ‘why we do what we do’ and provided a great overview of SIPs, SIP related requirements, and modeling.”

Ed Orris, PA DEP

How Many Members Attended MARAMA Events in FY 2016?

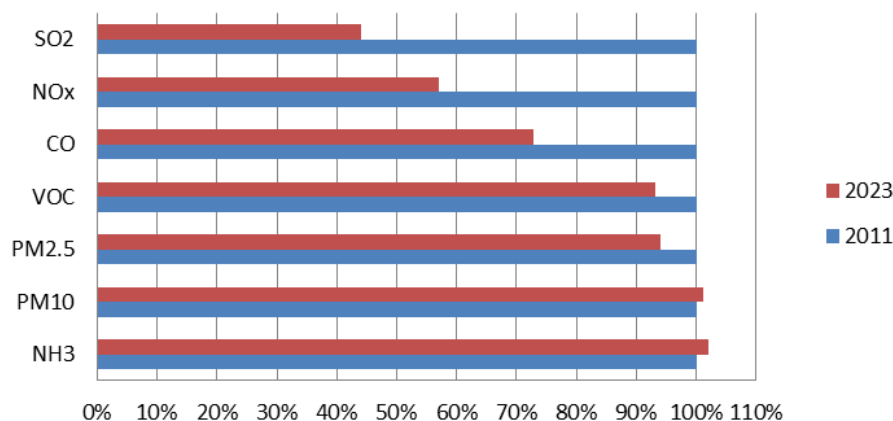
Allegheny County	45	North Carolina	102
Delaware	142	Pennsylvania	141
District of Columbia	38	Philadelphia	66
Maryland	171	Virginia	133
New Jersey	145	West Virginia	68

Estimating Future Regional Emissions

MARAMA continues to support member agencies with the emissions inventory coordination and expertise that they need to meet their regulatory obligations and analytical requirements. MARAMA's approach is to work collaboratively with State and Local agencies and the USEPA. MARAMA adjusted the 2011 EPA inventory with improvements identified by state agency partners, and carried the improvements forward to the 2017 and 2023 inventories.

In 2016, with assistance from contractor CSRA, MARAMA estimated emissions growth factors for 2023 using a new, more flexible Excel-based tool. USEPA used these factors to estimate 2023 emissions in order to assess the potential for interstate transport of air pollution.

2011 to 2023 Anticipated Emissions Trends for Northeast & Mid-Atlantic States



Looking Ahead for Our Region

- **Sulfur Dioxide:** Power plant closures and switches to cleaner fuels will yield significant SO₂ emissions reductions. Additional benefits will come from lower sulfur content limits for gasoline and diesel fuels and from more stringent sulfur content limits for home heating oil and other distillate/residual fuel oils.
- **Oxides of Nitrogen:** Significant reductions are predicted in NO_x emission from motor vehicles and power plants. These outweigh NO_x emissions increases from oil & gas exploration and aircraft operations.
- **Carbon Monoxide:** Significant CO emissions reductions are projected due to national emissions standards for highway vehicle and non-road engines.
- **Volatile Organic Compounds:** Biogenic emissions represent about two thirds of the total VOC emissions. Modest decreases in VOC emissions from human activities are projected, due primarily to reductions in emissions from motor vehicles.
- **PM ≤ 2.5 μm³:** Most of PM_{2.5} emissions in our region result from re-entrained dust (dust on paved roads that becomes airborne with passing vehicles) and from residential, commercial, and industrial fuel combustion. Residential wood combustion is also a significant source of PM_{2.5}.
- **PM ≤ 10 μm³:** Most PM₁₀ emissions result from re-entrained dust.
- **Ammonia (NH₃):** Nearly all of the NH₃ emissions in the inventory are due to agricultural fertilizer application and livestock waste operations.

See more details on MARAMA's website at www.marama.org.

2016 MARAMA Outstanding Service Awards

MARAMA's success depends on collaborative efforts by staff from member agencies. Each year MARAMA presents an award to recognize those individuals whose contributions have been outstanding. The **2016 MARAMA Outstanding Service Awards** went to:

- Hannah Ashenafi and Emily Bull, MDE: In appreciation of their work to develop temporal profiles for emissions from small Electric Generating Units that operate primarily during peak electricity demand periods.
- Paula Hemmer, NC DEQ: In recognition of her leadership and collaboration with representative from VA, WV, SC, and affected utilities to improve estimates of future growth in emissions from electric generating units.



Hanna Ashenafi and Emily Bull from MDE



Paula Hemmer-NC DEQ

Air Quality Improvements Meet 75 ppb Ozone Standard

Regional air quality improved significantly in the last four years. While gearing up to meet the new 70 ppb ozone standard, MARAMA members made progress in meeting the 75 ppm ozone standard.

EPA determined four more areas had met the July 2015 deadline to attain the 75 ppb ozone standard: Sussex County, DE, plus the Allentown-Bethlehem-Easton area, the Lancaster area, and the Reading area in PA. EPA provided an additional year for the Pittsburgh-Beaver Valley, PA area to meet the National Ambient Air Quality Standard adopted in 2008. Three years of data indicated the Pittsburgh area also met the 75 ppb ozone standard. All five of these areas continued to be designated Marginal nonattainment pending additional actions.

EPA also extended the attainment date to July 2016 for both the Philadelphia-Wilmington-Atlantic City area and the Washington, DC-MD-VA area. EPA's determination on whether those areas had met the new deadline was expected in 2017.

The New York-New Jersey-Connecticut nonattainment area, which includes northern New Jersey, failed to attain the 75 ppb ozone standard by July 2015. Due to persistent high concentrations in New York and Connecticut, EPA didn't just extend the attainment deadline. EPA reclassified the entire area as Moderate nonattainment with a deadline to achieve healthful air quality no later than July 20, 2018.

From May through July 2016 fires across northwestern Canada contributed to high ozone levels as winds carried the smoke across Canada and the US. Several MARAMA agencies began preparing demonstrations that certain days would not have exceeded the 75 ppb standard without the influence of the wildfires. These Exceptional Event demonstrations may affect what areas need to do to demonstrate compliance with both ozone standards.

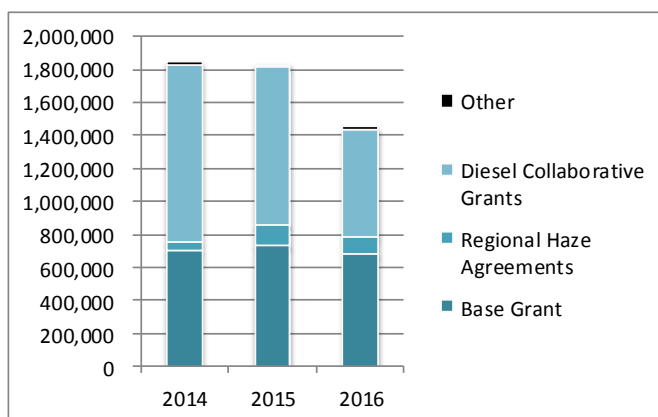
It's clear further progress is needed to meet the 70 ppb standard. In 2016 air quality exceeded 70 ppb on 37 days in the New York-New Jersey-Connecticut area, 23 days in the Baltimore area, 23 days in the Philadelphia area, 15 days in the Pittsburgh area, and 13 Days in the Washington area. MARAMA's emissions inventories will help our members develop strategies to improve air quality as they strive to maintain progress and meet the stricter 70 ppb ozone standard.

Member Support Augmented by Pass-Through Grants and Support for Technical Work

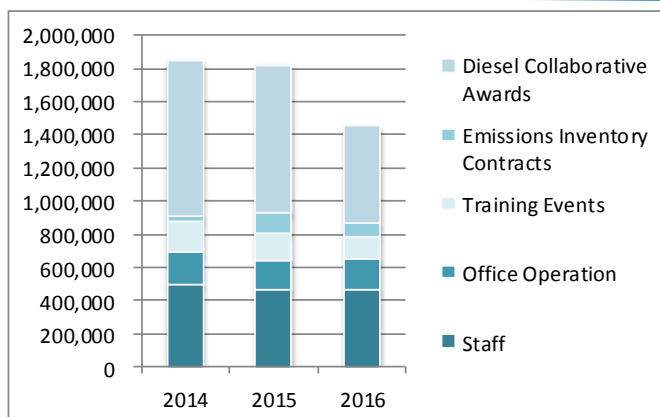
Thanks to our member agencies, MARAMA received continuing primary support through our EPA Base Grant in FY 2016. MARAMA's Training Coordinators scheduled more in-person courses than in FY 2015, but overall training costs were lower. MARAMA's experienced technical staff members continued regional emissions inventory improvement projects with Base Grant support augmented with declining support from regional haze agreements. The Base Grant also provided staff support for the Mid-Atlantic Diesel Collaborative.

The largest drop from FY 2015 levels was in pass-through grants for diesel emissions reduction projects. In FY 2016 MARAMA managed four grants to reduce diesel emissions, including two EPA grants, one subaward from the Commonwealth of Virginia, and one grant to MARAMA from the Allegheny County Health Department. Less EPA funding was available this year, and activity in Allegheny County declined. In contrast, funding from Virginia's diesel emissions reduction project increased.

FY 2016 Revenue



FY 2016 Expenses



MARAMA Directors and Staff

Board of Directors, 2016

William F. "Fred" Durham, West Virginia, Chair
Cecily M. Beall, District of Columbia, Vice-Chair
Michael G. Dowd, Virginia, Treasurer
George S. "Tad" Aburn, Jr., Maryland
Joyce E. Epps/Krishnan Ramamurthy, Pennsylvania
Jayme Graham, Allegheny Country
Sheila Holman, North Carolina
Ali Mirzakhilili, Delaware
Thomas Huynh/Kassahun Sellassie, Philadelphia
Francis "Frank" Steitz, New Jersey

MARAMA Staff, 2016

Susan S.G. Wierman, Executive Director
Julie R. McDill, P.E., Sr. Environmental Engineer
Jackie Burkhardt, Co-Training Coordinator
Sue A. Dilli, Co-Training Coordinator
Deborah L. Thomas, Diesel Program Manager
Susan A. McCusker, Ph.D., Environmental Scientist
Sheri Buttarazzi, Office Manager
Sharon C. Ray, Administrative Assistant