



METROPOLITAN WASHINGTON AIR QUALITY COMMITTEE (MWAQC)

October 27, 2021
12:00 P.M. – 2:00 P.M.
Webinar

Chair: Robert Day, City of College Park

MEETING SUMMARY

MWAQC MEMBERS AND ALTERNATES

- Robert Day, City of College Park (Chair)
- Anita Bonds, District of Columbia (Vice Chair)
- Takis Karantonis, Arlington County (Vice Chair)
- Peter Kovar, City of Takoma Park (Vice Chair)
- Tad Aburn, Maryland Department of the Environment
- Dr. Kambiz Agazi, Fairfax County
- Tom Ballou, Virginia Department of Environmental Quality
- Michele Blair, City of Laurel
- Collin Burell, District of Columbia
- Virginia Burke, Maryland Department of Transportation
- Kelly Crawford, District Department of Energy and Environment
- Tom Dernoga, Prince George's County
- Sylvia Glass, Loudoun County
- Jason Groth, Charles County
- Dawn Hawkins-Nixon, Prince George's County
- Denise Mitchell, City of College Park
- Guillermo Ortiz, ACPAC Chair
- Jim Ponticello, Virginia Department of Transportation
- Tom Ross, City of Fairfax
- Dave Snyder, City of Falls Church
- Kari Snyder, Maryland Department of

Transportation

OTHERS

- Dr. Susan Anenberg, George Washington University
- Samuel Gaber, Fairfax County
- Kent Irwin, Loudoun County
- Joseph Jakuta, District Department of Energy and Environment
- Sophia Marcus, District of Columbia
- Regina Moore, Virginia Department of Transportation
- Will Perkins, District of Columbia
- Catherine Salarano, Maryland Department of the Environment
- Michael Trihn, Virginia Department of Transportation
- Megan Ulrich, Maryland Department of the Environment
- Norman Whitaker, Virginia Department of Transportation

COG STAFF

- Leah Boggs, COG Department of Environmental Programs
- Jen Desimone, COG Department of Environmental Programs
- Lyn Erickson, COG Department of Transportation Planning
- Jeff King, COG Department of Environmental Programs

- Sunil Kumar, COG Department of Environmental Programs
- Tim Masters, COG Department of Environmental Programs
- Mark Moran, COG Department of Transportation Planning
- Erin Morrow, COG Department of Transportation Planning
- Wanda Owens, COG Department of Transportation Planning
- Jane Posey, COG Department of Transportation Planning
- Kanti Srikanth, COG Executive Office
- Dusan Vuksan, COG Department of Transportation Planning

1. PUBLIC COMMENT PERIOD, APPROVE MINUTES, CHAIR'S REMARKS

Robert Day, MWAQC Chair

Chair Robert Day called the meeting to order. There were no public comments. The May MWAQC meeting summary was approved without any changes.

2. COMMITTEE REPORTS

MWAQC Technical Advisory Committee (TAC) – Kelly Crawford

MWAQC-TAC held a call on October 12:

- Members heard from DC's Department of Energy and Environment (DOEE) regarding their exceptional events request to the US EPA. They await a response from EPA, but do not expect a response until February 2022.
- Next month, members will hear from the Maryland Department of the Environment (MDE) regarding some of their projects.
- Equity, air quality and environmental justice impacts on the region's work as it relates to the ozone season has become an increasingly important focus.
- The results of the official ozone season will be finalized soon. TAC members will hold a special ozone planning call on October 28 to discuss ozone NAAQS planning as it relates to the development of a potential maintenance or attainment plan. This will be TAC's biggest priority moving forward.

Air and Climate Public Advisory Committee (ACPAC) – Guillermo Ortiz

ACPAC held a webinar meeting on September 20:

- ACPAC awarded the 2021 Climate and Energy Leadership awards at the October 13 COG Board meeting. The awardees were Arlington County's Lubber Run Community Center project and the Washington Metropolitan Area Transit Authority's (WMATA) Energy Solution for Platforms Improvement Project. They received awards for their outstanding efforts to reduce GHG emissions and advance equity across the region. Arlington County's Lubber Run Community Center was completed in 2020 and is the County's first net-zero energy building, in addition to Arlington Public Schools' three net-zero energy schools. The building design was driven by the zero-energy goal of maximizing space for the on-site solar array, while optimizing the building's energy performance. WMATA's Energy Solution Platform Improvement Project is a multi-year rehabilitation project to make outdoor stations safer and more accessible to customers. With the large number of capital improvement projects underway, WMATA wanted to reduce energy use during construction by rethinking how electricity was distributed at stations during shutdown. They designed a new temporary distribution panel, taking advantage of existing electricity sources that reduced energy consumption, associated GHG emissions, and increased the reliability and efficiency for critical electric systems.
- Additionally, in planning discussions for this year's awards, committee members expressed

ways to enhance the program, including how to better incentivize participation in the program and incorporating evaluation criteria for social justice. The committee plans to incorporate some of those suggestions looking forward to the 2022 program.

- Over the past months, the committee has received regular updates from Sunil Kumar (COG staff) on the 2015 ozone attainment process. ACPAC is ready to provide input when needed.
- ACPAC's next meeting is November 15.

MWAQC Executive Committee – Jen Desimone

The MWAQC Executive Committee took action on two comment letters that would reduce emissions from motor vehicles. The letters were on behalf of MWAQC, TPB, and CEEPC:

EPA Proposed Rule to Revise Existing Greenhouse Gas Emissions Standards:

- EPA solicited comments on their proposed rule to revise existing GHG emissions for passenger cars and light trucks.
- The joint letter provided support to strengthen the GHG emissions standards, which would help the region meet climate and air quality goals (reducing GHG, NOx, and PM2.5).
- On behalf of MWAQC, the Executive Committee approved a comment letter which was submitted on September 22.

NHSTA Proposed Rule to Revise Existing Corporate Average Fuel Economy (CAFE) Standards:

- NHSTA solicited comments on their proposed rule to revise existing CAFE standards for passenger cars and light trucks.
- The joint letter provided support to strengthen the standards, which would help the region meet climate and air quality goals (reducing GHG, NOx, and PM2.5).
- On behalf of MWAQC, the Executive Committee approved a comment letter which was submitted on October 18.

Clean Air Partners – Jen Desimone

Clean Air Partners have been involved in the following:

Ozone Action Month (August):

- To heighten awareness during the hottest time of the summer, Clean Air Partners designated the month of August as Ozone Action Month. Social media content focused on individual actions that contribute to the formation of ground level ozone. Tips were promoted through Digital Ambassadors (Instagram and Facebook), partner outreach and toolkit, and engaged with meteorologists during the month. Activities included:
 - Digital Ambassadors (“social media street teams”) – partnered with 11 local social media influencers to promote content through Instagram and Facebook.
 - Owned and Partner Social Media Content– Content posted on Clean Air Partners and Partner social media. Utilized #CAPOzoneAction and boosted posts.

Car Free Day:

- Clean Air Partners joined Commuter Connections to promote Car Free Day in September. The week leading up to Car Free Day included promotional social media efforts from Clean Air Partners’ Digital Ambassadors on Instagram, Twitter, and Facebook to encourage residents to pledge to go car free.

Energy Efficiency Campaign:

- Next month, Clean Air Partners and Washington Gas will join on a campaign focusing on energy efficiency. This will be a social media campaign promoting tips residents can do to become energy efficient and save money.

Emissions Demonstration Exhibit (Holiday Season):

- During this holiday season, Clean Air Partners will have an exhibit to demonstrate how residents can reduce their emissions, building on the 2020 eco-driving campaign. The exhibit will feature a vehicle encased in a clear plastic bubble. A large screen invites participants to engage with the exhibit via a contactless interactive quiz. The challenge is composed of questions on driving behaviors and their impact on emissions and air quality. When a player chooses an incorrect answer, a puff of “smoke” vapor, representing vehicle emissions, shoots from the tailpipe into the bubble, and the game provides the player with information about air pollution linked to their answer, delivered in a fun, compelling, and memorable way. There will be two exhibits – 1 in metropolitan Washington and 1 in metropolitan Baltimore.

Climate, Energy, and Environment Policy Committee (CEEPC) – Jeff King
CEEPC held a webinar meeting on September 22:

- The theme of CEEPC’s September meeting was focused on electrification of transportation. They had a panel talk specifically about transit bus electrification. The District of Columbia’s Transportation Electrification Roadmap was also presented.

3. LOCAL AND STATE UPDATES

Local Members and State Air Agencies

- Kelly Crawford (DOEE) said that DOEE is working on a local air quality monitoring pilot in the District. The District also has a couple of rulemakings that are approaching finalization. The first is the rulemaking for their VOC RACT. The comment period ended this week, and they received no comments. This week, a proposed rulemaking for removal of stage II vapor recovery will also be finalized.
- Tad Aburn (MDE) said that the comment period for Maryland’s anti-tampering regulation is closing soon and MDE will be moving forward with this regulation in the Fall. MDE has also been submitting comments on actions related to emissions transport from upwind states. MDE recently issued a report on a project they did as part of a community partnership with the University of Maryland (UMD) and a community. They ran a targeted inspection program using hyper-local sensor data. The report has several conclusions that may be of interest to the region. MDE also just released a near final buildings energy plan that is out for comment now.
- Tom Ballou (VDEQ) said that VDEQ is taking their advanced clean cars rule to their Air Board in December and hope to have that approved and adopted by the end of the year.

4. MWAQC NOMINATING COMMITTEE FOR 2022 OFFICERS

Robert Day, MWAQC Chair

The election of MWAQC’s 2022 officers will take place at the December meeting. In preparation, Chair Day appointed volunteers to serve on the MWAQC Nominating Committee. The role of this committee is to develop the 2022 slate of officers. Dave Snyder (City of Falls Church) and Tom Dernoga (Prince George’s County) have been appointed to serve on this committee.

5. ADDRESSING OZONE TRANSPORT FROM UPWIND STATES

Ted Aburn, Maryland Department of the Environment

MDE works in partnership with the other states, local universities (UMD at College Park, UMBC, and Howard University) and federal agencies (NASA, NOAA, NIST) to study ozone and fine particulate air pollution problems. A major focus has been the issue of transport; ozone mostly, but also fine particulates. One of the main conclusions of this work is that about 70 percent of the ozone problem in the metropolitan Washington region originates from emissions in the states upwind of Maryland and the DC area. The second major conclusion is that if nitrogen oxide (NOx) emissions from power plants and

vehicles in Maryland and upwind states were reduced, it would dramatically reduce ozone in Maryland and the Washington DC non-attainment area. Despite great progress in improving air quality, the State of Maryland is still above the ozone NAAQS with several ozone exceedance days. 2020 was an anomaly because of COVID-19 and the shutdowns. Maryland is back up to the 2017 to 2019 number of exceedances in 2021. On the average bad ozone day in the metropolitan Washington region, about 70 percent of the area's problem originates from sources outside of the District of Columbia, the Commonwealth of Virginia, and the State of Maryland. On the very worst days, often the days that count the most for NAAQS attainment, the upwind contribution can approach 90 percent. EPA modeling shows that Pennsylvania, West Virginia, Ohio, Kentucky, and Indiana (in order of importance) are the five states that contribute most to the ozone transport issue. Almost all of the recent bad ozone days in the region are driven by ozone transport weather patterns. Upwind states and the EPA are now compelled by multiple court decisions and other deadlines to take significant actions to continue to reduce ozone transport in 2021 and 2022. The basic issue is that coal-fired power plants in those five previously mentioned states need to run their pollution controls every single day, which they are not doing. These states have not adopted regulations with emission limits that apply every day. On most bad ozone days, this allows for over 30 tons of excess NO_x emissions to be released in Pennsylvania alone. MWAQC-TAC could potentially develop a short, policy level template for commenting on upcoming opportunities to comment on transport actions proposed by upwind states or EPA. This template could then be used to draft action specific comments. The MWAQC comments could support or simply mention comments submitted by the MWAQC members representing the state air quality agencies.

Discussion:

- MWAQC members feel that this is an important issue and suggested that MWAQC moves forward, as recommended, with development of a draft comment letter for use in upwind transport issues.

Action: MWAQC members passed a motion to direct MWAQC-TAC to develop a comment letter for use in upwind transport issues, and to continue working on this issue and provide additional communications as appropriate.

6. OZONE SEASON UPDATE

Sunil Kumar, COG Environmental Engineer

The ozone season started on March 1 and ends on October 31. There were eight code orange days and 55 code yellow days based on draft data as of September 30, 2021. The rest were code green days. With regard to ozone exceedance days, they are still in a downward trend. Last year, was the lowest number of code orange days (two) for over the past few decades, which was likely due to the COVID-19 lockdowns and related restrictions. In 2021, exceedances went back up (eight code orange days). However, since 2009, there have been lower ozone emission levels, which has meant that even when the temperatures exceed 90 degrees Fahrenheit, there are still fewer exceedance days than there were prior to 2009. Ozone design value is a parameter that the EPA uses to evaluate an area's attainment status. Since 1999, the region has gone from 106 part per billion (ppb) of ozone down to 70 ppb this year. The 2015 8-hour ozone National Ambient Air Quality Standard (NAAQS) is 70 ppb, which means in 2021, the metropolitan Washington region has attained the ozone NAAQS. However, the deadline for attaining the standard was August 3, 2021. Thus, the design value has to be based on the period between 2018 and 2020, which means that the region is at 71 ppb: nonattainment. There are still a few days of this year's ozone season left and the data is still draft until certified next May, but it is likely that the region will be in attainment for 2021. This may also change, as the District of Columbia has requested EPA to invalidate the dataset for 2020 due to the exceptional events related to COVID-19.

With regard to 24-hour average particulate matter (PM_{2.5}) levels, there has been one code red day and one code orange day so far this season. The code red day was on July 4, with the code orange day

falling the day after (July 5). They are both attributable to Independence Day activities and fireworks. The PM2.5 exceedance trend shows a big decrease in this pollution over the past two decades. In the past decade, there have been a handful of exceedance days. Since the late 2000s, the region has comfortably attained the 1997 Annual PM2.5 Standard, as well as the 2006 24-Hour PM2.5 Standard. The EPA is taking another look at the PM2.5 Standard and experts are looking at the technical and policy aspects of a possible revision of the current standards. A standard update may be seen next year. COG staff will keep an eye on this and report back to MWAQC if/when an updated standard is released.

In conclusion, Ozone and PM2.5 levels are overall higher in 2021 compared to 2020, but still a bit lower compared to 2019 suggesting air quality is getting closer to "normal" levels. Relatively warmer weather and higher emissions this year contributed towards higher pollutant levels this year compared to 2020. Though the Washington region attained the 2015 ozone standard this year, a lot can be attributed to abnormally low ozone data observed in 2020. There is a chance the region can go back to nonattainment in future as post-pandemic recovery continues next year and beyond, leading to increased emissions. Therefore, there is a need to continue efforts to lower ozone levels.

Discussion:

- MWAQC members highlighted the significant progress that has been made in air quality improvement thanks to local and national policies that have resulted in positive, measurable results. The EPA will be setting a new ozone standard in the coming years, and many researchers from the public health community believe that the current ozone standard is not as protective of public health as it should be, and it needs to be strengthened. While the progress is cause for celebration, the region should also keep working to improve air quality in metropolitan Washington.
- The PM2.5 levels in 2021 trend a little bit higher than 2020, except for the last few weeks of the ozone season. This is heavily dependent on the weather. This year, it has been warmer, which is less conducive to PM2.5 concentration.

7. EQUITY AND AIR QUALITY IN WASHINGTON DC

Dr. Susan Anenberg, George Washington University

Air pollution levels are uneven within cities, contributing to persistent health disparities between neighborhoods and population sub-groups. Dr. Susan Anenberg presented the results of research conducted in Washington, DC on the relationship between fine particle exposure and health risks in communities of color. Air pollution continues to place a large burden on public health globally and in the US. Future air quality management requires a shift from engineering controls to reducing the use of fossil fuels, with many local and immediate benefits for public health. Using integrated estimates from satellites, chemical transport models, and ground observations, the Institute for Health Metrics and Evaluation estimates PM2.5 mortality ranges from around three to four million. Currently, PM2.5 pollution is considered the fourth leading global health risk factor.

The health burden from nitrogen dioxide can be easily and accurately estimated. One of the health outcomes that is most linked with nitrogen dioxide is pediatric asthma incidents. In Washington DC, 25 percent of pediatric asthma incidents is attributable to nitrogen dioxide pollution. George Washington University has created a [website](#) that allows anyone to access air quality data for 13,000 cities for PM2.5, ozone, and nitrogen dioxide concentrations, as well as disease burdens associated with each of those pollutants. PM2.5 pollution in the metropolitan Washington region has attained the EPA NAAQS, as well as the World Health Organization (WHO) 2005 air quality guideline (AQG). However, the WHO's 2021 AQG is more stringent, and the region does not meet this standard yet. For ozone, epidemiological studies are showing the linkage between respiratory mortality and long-term exposure to ozone. The six-month average of the daily eight-hour maximum ozone is a different metric to what the region normally uses to measure ozone pollution, but it helps to show long term exposure to this pollutant. Metropolitan

Washington is above the new WHO AQG for ozone, which is about 30 ppb. DC is now below the WHO 2005 ATG for nitrogen dioxide, and far below the EPA NAAQS. The nitrogen dioxide NAAQS has not been updated since 1971 and is out of date in terms of the scientific progress linking it with health effects. The region is currently not meeting the new WHO 2021 ATG for nitrogen dioxide.

Researchers at George Washington University partnered with DOEE to estimate the air pollution-related health risks and how they vary within the District of Columbia. The results of that study, soon to be published in the journal *GeoHealth*, show the temporal trends in not just PM2.5 concentrations, but PM2.5-attributable mortality. That PM2.5-attributable mortality is trending down in the District. The spatial distribution of PM2.5-attributable mortality risks lines up almost exactly with the racial map of the city. This joins a long line of academic literature, demonstrating the inequitable distribution of air pollution, but also takes it a step further and demonstrates that it is not just air pollution exposure, but air pollution-related health risks that are inequitably distributed.

The University of Colorado Boulder has attempted to model the contributions of emissions from upwind states and different sectors to PM2.5, ozone, and nitrogen dioxide concentrations in the District. Their results underscore the issue that metropolitan Washington is not completely in direct control of air quality and that the region is affected by upwind sources. A major scientific advance is that they have modelled this on a daily basis and can show the locations of emissions and the sector of emissions that contribute to high daily PM2.5 concentrations in the District for each day of the year. For days with very high PM2.5 concentrations, they can figure out where those emissions originate from and who the region needs to work with to reduce those emissions to protect health in the District.

George Washington University also did research on satellite observations of nitrogen dioxide in the DC and Baltimore area. Higher nitrogen dioxide concentrations track very closely with the roadways. They were looking at this when the COVID-19 pandemic occurred, and everybody was asking how this would impact air pollution. The researchers worked to tease out the contribution of the passenger vehicle sector to air pollution injustice across the country using satellite data. They had to disentangle seasonal changes, and wind speed and direction from observed nitrogen dioxide levels in different cities across the country. They developed new methods to account for that seasonal change, wind speed, wind direction, and temperature. The results show that half of the drop in air pollution levels due to the COVID-19 lockdowns was attributable to anthropogenic emission changes, the other half of it was due to those natural factors.

They then looked at this through an environmental justice lens. During COVID-19 restrictions and lockdowns, less-educated minority communities experienced the largest decrease in nitrogen dioxide levels. However, the study showed that COVID-19 lockdowns did not eliminate nitrogen dioxide disparities by race. In many cities, the post-lockdown nitrogen dioxide levels in the least white communities are still around 50 percent larger than the pre-lockdown nitrogen dioxide levels in the most-white communities, and this also holds for income and educational attainment. That indicates that the disparity was so large prior to the lockdowns that even about a 50 percent drop in passenger vehicle traffic was not enough to erase it.

This has led the research to focus more on heavy duty trucking and buses in particular, as the light duty passenger vehicle segment contributes somewhat to air pollution inequities, but it is actually the heavy duty trucks that appear to be contributing more. Interstate 95 (allows trucks) and the Baltimore-Washington Parkway (prohibits trucks) were compared and there is a very significant difference in nitrogen dioxide levels along these corridors. The researchers also identified warehousing activity north of Dulles International Airport contributing heavily to nitrogen dioxide pollution. They will be working to see if there is linkage between these areas and nitrogen dioxide disparities.

In conclusion, it is great news for the region that there has been success in lowering air pollution levels.

This has been accomplished by focusing on the linkage between emission sources and air quality. The next challenge will likely come from the contribution of greenhouse gas emissions and air pollution resulting from climate change. The focus will likely transition to burning less fossil fuel in the first place, rather than treating the effluent of burning the fuel. The good news is that there are many ways to do this, such as transitioning to active transportation, or investing in renewable energy and energy efficiency upgrades. All these things will have massive health benefits. George Washington University has been working with C40 Cities, which has been leading the largest climate action planning program worldwide, affecting over 700 million people to start to integrate air quality and health into climate action planning at the urban scale with a large conglomeration of partners.

Discussion:

- There is some disparity in pollution levels in US cities versus European cities. US cities do better with some pollutants and worse than others. European cities have struggled with nitrogen dioxide pollution in particular due to the heavy use of diesel in passenger vehicle fleets.
- For the metropolitan Washington region, it looks like surface emissions from on road transport, nonroad transport and electricity generating units (EGUs) are the key segments that contribute to PM2.5 pollution. There is no single dominant contributing source. The region needs to ensure that many sources are addressed simultaneously.
- There are strategies that the region can implement aimed at individuals, dealers and repair shops with regard to tampering with the emission control equipment on vehicles. It is a lot more widespread than people realize. Also, greater enforcement of anti-idling regulations would help. Replacement of the appropriate catalytic converters in vehicles is another strategy to lower pollutant levels. Lastly, making sure that the region tries to figure out how to make the cleanest EGUs run first on the hottest days is important. Right now, the way the system works is the dirtiest units are also often the least cost, so they run first before the cleanest units. MWAQC could potentially pursue these strategies and make them into regional programs.
- The scientific research overwhelmingly indicates that there is a link between PM2.5 exposure and COVID-19 cases, as well as severity. This is not surprising because prior research has shown that PM2.5 makes people more susceptible to other types of infection. As the literature grows, COVID-19 may be included in these analyses. The estimates in this presentation are probably dramatic underestimates of the true burden of air pollution because many things were not included in the analysis, like infections, low birth weight, short gestational age, cognitive decline, chronic kidney disease, or all the various other health outcomes that new research is looking at with air pollution exposure.

8. ADJOURN

Robert Day, MWAQC Chair

Chair Robert Day adjourned the meeting. The next MWAQC meeting is scheduled for December 15, 2021.