

## **WHAT WE CAN DO TO IMPROVE AIR QUALITY IN THE COG REGION**

**June 21, 2018  
12:30pm – 2pm**

### **Workshop Meeting Highlights**

#### Attendees:

Alexandra Catena, District Department of Energy & Environment  
Joseph Jakuta, District Department of Energy & Environment  
Tom Ballou, Virginia Department of Environmental Quality  
Alexandra Brun, Maryland Department of the Environment  
Tina Casey, District Department of Transportation  
Joan Kelsch, Arlington County  
Tom Little, Arlington County  
Khoa Tran, City of Alexandria  
Bill Eger, City of Alexandria  
Lisa Goldberg, City of Alexandria  
Ellen Eggerton, City of Alexandria  
Kate Walker, City of Falls Church  
Shannon Moore, Fredrick County  
Scott Fincham, Loudoun County  
Stan Edwards, Montgomery County  
Gina Mathias, City of Takoma Park  
Dyan Backe, City of Gaithersburg  
Erica Shingara, City of Rockville  
Dawn Hawkins-Nixon, Prince George's County  
Luisa Robles, City of Greenbelt

#### Staff:

Steve Walz, COG/DEP  
Sunil Kumar, COG/DEP  
Amanda Campbell, COG/DEP  
Jeff King, COG/DEP  
Erin Morrow, COG/DTP

#### **“What We Can Do” Project Background**

The Washington region's air quality has improved dramatically over the last couple decades, but still, the region experiences code orange (unhealthy for sensitive groups) air days every summer. Poor air quality causes a number of health problems and is harmful to the environment. Furthermore, the Washington region was designated as a marginal nonattainment area for the 2015 ozone National Ambient Air Quality Standard and must attain the standard (70 ppb) by August 2021.

The *What We Can Do* project came from a priority set by MWAQC chair Hans Riemer, of Montgomery County, to identify actions that could be taken in our region, particularly by local governments, to reduce ozone pollution to a level that would result in no unhealthy air days. Mr. Riemer discussed how to address this issue with the Air and Climate Public Advisory committee, which assisted in

developing a scope of work for a study that would draw from existing work and rank the measures based on costs and benefits. COG staff conducted the research in-house and summarized the results in a report: *What We Can Do to Improve the Air in Metropolitan Washington (WWCD)*. The report focuses on measures to reduce nitrogen oxide (NOx) emissions since it is the most important precursor for ozone pollution in our region. The major sources of NOx include fossil fuel-based electricity generation, non-road and on-road vehicles. Vegetation helps mitigate ozone pollution. Measures to reduce NOx emissions have co-benefits including reducing greenhouse gas emissions, quality of life, cost savings, and others. Many of the actions identified are already being implemented to some extent but could be expanded throughout the region to further reduce ozone pollution.

After presenting the report to ACPAC, MWAQC-TAC, and MWAQC this spring, COG staff is seeking feedback from state and local governments on the implementation of the measures.

Based on the report findings and subsequent feedback, discussion focused on the following priority NOx emission control measures:

- Alternative fueled vehicles, retrofits and re-powers for heavy-duty (Class 6 plus) truck, and anti-idling measures
- Nonroad diesel engine retrofits, rebuilds and anti-idling measures
- Communications: public outreach and education, professional training, state and federal advocacy
- Green infrastructure and heat island mitigation
- Energy efficiency/Renewable energy
  - Building-level energy efficiency/renewable (EERE) energy
  - Green power purchasing
  - Battery storage

#### **“WWCD” Discussion and Feedback**

Participants were first asked if the list was complete, and if any changes or other priorities should be raised. Participants then provided their feedback in terms of feasibility, challenges, and suggestions for implementation of these measures. They also expressed the need for additional data and information about a few measures. This feedback, along with links to some of the information sources discussed at the meeting, is described below.

#### **Transportation Programs**

Participants expressed their support for public transit, transit subsidy, teleworking, rideshare programs, and bike and pedestrian infrastructure and wanted to learn more about the impact of these programs on NOx emissions. Avoiding business travel, including air travel, by using remote meeting services and increasing transit benefits are also effective. COG staff said that these programs generally result in lower vehicle miles traveled (VMT) which in turn leads to lower NOx emissions. The Transportation Planning Board (TPB) staff promised to provide details of the above transportation programs and NOx emission benefits they provide.

Note: After the meeting, the TPB staff provided details of the following transportation programs providing NOx emission benefit.

- TPB performs an annual transportation conformity analysis, which includes the impact of the aforementioned transportation programs on NOx emissions. The analysis evaluates the impact of single-occupancy vehicle travel versus other modes (See slides 26, 27, and 31,

- <https://www.mwcog.org/assets/1/28/10192016 - Item 9 - 2016 CLRP Performance Analysis.pdf>)
- COG's Commuter Connections program conducts an evaluation of its programs including Maryland and Virginia Telework, Guaranteed Ride Home, Employer Outreach, and Mass Marketing. NOx reductions (tons/day) is one of the measures calculated. This report, covering the time period FY 2015-FY 2017, is a good reference for showing the NOx reductions resulting from travel demand management strategies.
- <https://www.commuterconnections.org/wp-content/uploads/2017-TERM-Evaluation-FINAL-Report-112117.pdf>
- TPB's Long Range Plan Task Force conducted an analysis of ten potential initiatives to improve the long-range performance of the regional transportation system. The "Phase II Detailed Technical Report - An Assessment of Regional Initiatives for the National Capital Region (DRAFT)," details the results of that analysis (see link). The analysis includes an estimate of NOx emissions reductions for 2040.
- <https://www.mwcog.org/documents/2017/12/20/long-range-plan-task-force-reports-projects-regional-transportation-priorities-plan-scenario-planning-tpb/>
- COG's Multi-Sector Working Group was charged with identifying viable and implementable local, regional, and state actions to reduce greenhouse gas emissions (GHG). As part of that work a technical analysis estimated the impact of each potential strategy for years 2020, 2040, and 2050. While only GHG emissions were quantified for this study, a qualitative assessment of criteria pollutants was conducted. Detailed assumptions and results for the transportation and land use strategies begin on page 74 of the Final Technical Report.
- <https://www.mwcog.org/documents/2016/08/01/multi-sector-approach-to-reducing-greenhouse-gas-emissions-in-the-metropolitan-washington-region-final-technical-report/>

One participant encouraged requiring the use of after-market converters in light-duty vehicles. The states are currently considering this measure.

COG works to help facilitate the adoption of electric vehicles and alternative fuel vehicles through the climate and energy program and events such as the [Fleets for the Future](#) cooperative purchase and the January 2018 workshop.

#### Heavy Duty On-Road and Nonroad Vehicle & Equipment Measures

The group discussed various challenges associated with implementing programs such as awarding additional points in contracts to contractors using retrofitted, repowered, or clean (Tier 4) construction equipment engines within the desired three-year time frame. The group was of the view that it will take more than three years for the construction fleet owners to replace all engines in their fleet.

Participants suggested strategies for encouraging less idling for tour buses using incentives. For example, the Smithsonian museums (and Spy Museum/Newseum/Kennedy Center) could offer an expedited ticket (like fast track at the theme parks) or an early entry pass to enter the museums to tour bus companies with advanced pollution reduction strategies.

Anti-idling enforcement was recognized as an important issue. Participants suggested that emergency vehicles could reduce NOx emission by using a battery while idling. Another suggestion

was that refrigeration trucks could use power provided by the grocery store during delivery to reduce their idling emissions.

The group also discussed the purchase of electric transit buses. Frederick County recently purchased five such buses and is in the process of purchasing ten more. The group wanted to know how the cost calculation was performed for these buses in the WWCD report. COG staff said the cost benefit analysis was performed on a regional level. A county or city would need to conduct an analysis for a specific project (i.e. replacing a specific number and model year of diesel transit buses with a certain model of electric buses). COG staff mentioned that in general the initial cost of purchasing electric buses and building charging infrastructure may be high, but the low fuel and maintenance costs can more than offset the cost over the long term depending on the situation.

#### *On-Site Backup Generators & Battery Storage*

One suggestion was to look at ways to reduce emissions from on-site backup generators. These generators are often run on peak demand days, which tend to coincide with high ozone days. Therefore, NOx emissions from these generators can have a disproportionately high impact on ozone. The group also discussed the battery storage initiative. Batteries could be charged during off-peak time and used during the peak load times. This would help reduce NOx emissions from generators. COG has conducted some analysis on regional generators and associated regulations [here](#).

#### *Outreach and Education Initiatives*

The group emphasized the importance of outreach and education initiatives in changing behaviors that help reduce NOx emission and ozone pollution. Participants suggested that these initiatives should be part of the implementation of every control measure listed in the WWCD report as they help shape the development of regulations for those measures. The Chesapeake Bay cleanup effort similarly requires an outreach component involving nitrogen that may provide opportunities for coordination. Sometimes higher cost initiatives are necessary to serve an educational role (i.e. tour buses). The group recognized that it takes time to change people's behavior so the results from these initiatives may not be achieved in the three-year time frame. Also, it may be difficult to quantitatively evaluate the emission impacts of these initiatives. Nevertheless, the group felt that outreach and education initiatives are a key component of programs to successfully reducing NOx.

[Clean Air Partners](#) provides a variety of air quality educational and outreach initiatives for the region.

The role of advocacy for state and federal actions, such as maintaining café standards, was also identified as critical.

#### *Tree Canopy and Reforestation Programs*

The group discussed how local governments are successfully employing tree planting, applying easements, large format contracts, and reforestation efforts to meet multiple community objectives, such as in Frederick County and Prince George's County. A suggestion was made to expand the reforestation efforts from currently urban areas to sub-urban and rural areas and to leverage the water quality and aesthetic benefits of these efforts to increase tree cover and natural infrastructure.

COG's work to support concentrating growth in [activity centers](#) is a counterpoint to reducing the footprint of development through careful land use planning. COG recently published a [Regional Tree Canopy Management Plan](#) and adopted a [Green Streets Policy](#) in 2014.

### Energy Efficiency Measures for Buildings

The group suggested separating out the measures that apply to new/existing buildings and commercial/residential buildings since implementation of energy efficiency and renewable energy measures for these four groups differ.

Note: COG's climate and energy programs, committees and related projects address energy efficiency, renewable energy, and greenhouse gas reduction activities, most of which also have crossover NOx benefits. For example, many additional local government strides and challenges regarding zero energy buildings were discussed during the Built Environment Energy Advisory Committee meeting prior to this workshop, on June 21. Meeting materials are posted [here](#) and the meeting summary will be posted [here](#) when available.

### Wrap Up and Next Steps

The following were the main areas of interest in further work from the feedback at the work session:

- A. Transportation programs and planning to reduce emissions from light-duty vehicles by encouraging increased reliance on alternative modes, for example, improving bicycle and pedestrian infrastructure, rideshare and telework programs,
- B. Reducing emissions from heavy duty on-road vehicles and construction equipment, especially anti-idling,
- C. Peak shaving with battery storage and reducing peak emissions from back-up generators
- D. Education, outreach, and advocacy
- E. Tree and forest cover and green infrastructure for air quality, water quality, and community benefits

Outcomes of this meeting will be discussed at MWAQC-Technical Advisory Committee and MWAQC and inform work program priorities in the coming year.