Metropolitan Washington Council of Governments

ACPAC's DRAFT Air Quality Measures Work Scope Description

BACKGROUND FOR THIS INITIATIVE

Poor air quality has been linked to health problems, especially for sensitive populations. Over the last 25 years, the Washington region has made substantial progress in improving the air we breathe. Still, the region experienced eight code orange (unhealthy) air days this past summer. Moreover, a delay in the EPA designations under the 2015 ozone standard is apparent, which will delay the attainment date for the new standard. Given these facts, the Metropolitan Washington Air Quality Committee (MWAQC), at its September 2017 meeting, resolved to:

1. Commit to meeting the 2015 ozone National Ambient Air Quality Standards (NAAQS) in a timely manner and not delay reaching attainment even if EPA delays the official process; and

2. Support implementation of region wide and local actions to address the current and the future ozone NAAQS and to better protect public health and welfare; and

3. Is committed to achieving reductions in air pollutant emissions through a broad range of cost-effective control measures across multiple sectors.

Many recent regional reports and studies have listed air quality measures available to state and local governments. However, these reports do not prioritize, rank, or quantify the emission reductions or costs of the most promising measures based on the latest available literature. This project aims to address that gap.

At a discussion in mid-2017, the MWAQC Chair and members of the Air and Climate Public Advisory Committee (ACPAC) raised the prospect of conducting an analysis showing what actions could be put in place to reduce air pollution to a level that would result in no unhealthy air days across metropolitan Washington. Following up on this interest, MWAQC asked ACPAC to develop a Scope of Work for an analysis to identify the suite of local and regional measures, aka *What We Can Do*, that could achieve a 'no unhealthy air days' goal.

ACPAC had discussed that a high-level qualitative assessment or a quantitative, modeling assessment could be used for planning new or expand existing measures to reduce ozone levels in the region. MWAQC, based on input from its Technical Advisory Committee, is interested in knowing what level of work is needed for these analyses.

After some research and discussion, ACPAC members, recognizing the level of effort and resources required for a quantitative modeling based assessment, recommended focusing on a qualitative assessment approach. Therefore, ACPAC is focusing on finalizing the Qualitative Scope of Work, enclosed.

What We Can Do to Improve Air Quality - Qualitative Analysis Description

DISCUSSION

The overall goal of this project is to identify, through a qualitative analysis, the suite of local and regional measures, (Menu of Options), that could reduce air pollution in the region to the level that would result in no unhealthy air days –defined as no Code Orange or higher air quality days (>100 AQI). For each measure or suite of measures, the work should include an estimated range of costs, level of effort to implement, and estimated range of pollutant reduction achieved (in tons).

Assumptions

Studies in recent years show that ozone concentrations respond to NOx reductions more strongly than volatile organic compound (VOC) reductions in the Mid-Atlantic region.[1] Many measures may also have co-benefits from VOC or fine particle emissions reductions. Thus, the analysis shall focus on measures that reduce NOx emissions. Substantial reductions are needed to provide health benefits.[2]

During the last two years, Ozone levels across metropolitan Washington have ranged in the 76 to 88 ppb range on unhealthy (Code Orange) air days. Ozone levels would have to remain at or below 70 ppb to reach the goal of no unhealthy air days under the 2015 NAAQS ozone standard.

Considerations for Expertise Needed

The types of expertise needed to undertake this analysis includes: environmental management, environmental policy, urban planning, environmental engineering, atmospheric chemistry, air quality analysis, and emissions control technologies.

Estimated Cost

Grade	Hours	Rate	Total
Analyst	210	$130/hr	$27,300
Supervisor	70	$200/hr	$14,000
Project Estimated Total			$41,300

PROJECT INPUTS, TASKS, AND DELIVERABLES

Task 1 – Literature Review and Discussions with Experts

The purpose of this task is to understand what work has already been completed and can be used as inputs into this project, to help form a baseline scenario, to identify emissions reductions measures, and develop methods for demonstrating qualitatively what it would take for the area to achieve no

[1] Boylan J, Odman T, et al, "SEMAP 2018 Ozone Projections and Sensitivity to NO_X & VOC Emissions," LADCO Air Quality Workshop, April 2014.

[2] Model results of local powerplant indicate that a NOx reduction of 1.5 to 2.5 tons/day could yield 0.3 ppb to 0.6 ppb in O_3 benefit on high O_3 days. Reference: Lin, Jin, "Ozone Sensitivity Modeling Analysis to Evaluate Application of NOx RACT to Possum Point Power Station (PPPS) Unit 5," Office of Air Quality Assessments. October 2016.

unhealthy air days. Strategies shall include actions that MWCOG, states (DC, VA, MD), and the 24 jurisdictions within MWCOG could implement over the next five years to see improvements in ozone air quality. MWCOG staff shall be consulted throughout this process to provide guidance and answer questions.

Inputs to the project shall include:

- The air quality Regional Action Plan
- Multi-Sector Working Group Analysis
- COG's 2017-2020 Climate & Energy Action Plan
- COG's Gold Book
- Past control measures evaluations, including the Reasonably Available Control Measures Analysis (RACM) Analysis and Priority Measures Lists for the Ozone and PM SIPs.
- Existing regional air quality analyses and ozone modeling results, including
    - The Ozone State Implementation Plan (SIP) and Ozone Redesignation Request and Maintenance Plan for the 2008 Ozone NAAQS
    - Ozone Transport Commission modeling
    - CLRP conformity analysis and CLRP performance reporting.
- Review of other key regional efforts and best practices to improve air quality (e.g. California Air Resources Board, etc.)
- Long Range Transportation plans
- Other potential federal, state or local legislation, regulation or policies that would affect ozone air quality
- Additional literature available on the effectiveness of measures to achieve NOx or VOC reductions

Deliverables from this task include:

A. A summary of lessons learned from existing ozone modeling and implications for this qualitative analysis, including any assumptions necessary to move forward with the analysis of measures. For example, what does the modeling indicate about the impact of local controls on air pollution levels and the ability to achieve required reductions in the identified timeframe?
B. A list of potential emissions reduction strategies, indicating costs (high/medium/low, with a description of rating methods), and estimated range of NOx pollutant reduction achieved (in range of tons – high/ medium/ low – with each range defined numerically). Each strategy should be analyzed qualitatively for ease of implementation, including factors such as technical feasibility, member support, and known available funding sources. This shall also indicate which, if any, jurisdictions have already implemented the identified measures. Anti-Idling programs/policies, for example, should be evaluated as one of the measures. Analysis shall indicate which levels of local government would be responsible for implementing the emissions controls, including:
    - Level 1: Local jurisdictions within MWCOG
    - Level 2: Virginia, Maryland, and DC
C. Detailed description of methods, assumptions, and sources
D. Presentation of results to MWAQC TAC, ACPAC and COG staff.
E. Incorporate feedback into the project

Estimated Timeline: 4 weeks, or 160 hours

Task 2 – Identify Promising High-Impact Emissions Reductions Measures.

Based on the deliverables from task one, develop suites of emissions reductions measures to help the region achieve no unhealthy air days. Identify the two to four strategies that would be highest priority based on the level of emissions reduced, ease of implementation, and cost. These strategies shall include the most effective emissions reductions measures and discussion of why/how they were chosen. Identification of existing or potential funding mechanisms shall also be included. MWCOG staff shall be consulted throughout this process to provide guidance and answer questions.

Deliverables from this task include:

A. Summary of each emissions reduction suite, including which control strategies are to be implemented regionally or in the District of Columbia, Maryland or Virginia; estimated emissions reductions achieved (total, range in tons, per jurisdiction), and cost.
B. Presentations to the ACPAC, MWAQC TAC, and COG staff.
C. Incorporate feedback into the final report.

Estimated Timeline: 1 week, or 40 hours

Task 3 – Prepare a Final Report.

The report shall summarize and provide documentation of the project, including why the project was done, project methods, results, conclusions, and any recommendations. Additionally, the report should include qualitative discussion of the benefits (economic, health and environmental) of achieving no unhealthy air quality days. The main body of the report shall be no more than 20 pages long and include an include an executive summary geared for policymakers. A draft shall be circulated for review and comment to ACPAC, MWAQC TAC, and COG staff. The final report shall be delivered to MWCOG.

Deliverable: Final Report and presentations

Estimated Timeframe: 2 weeks, or 80 hours