

ITEM 8 - Action
January 28, 2009

Approval of TPB Letter to EPA Commenting on the Proposed Inclusion of Montgomery and Prince George's Counties in the Baltimore Nonattainment area for the 2006 24-Hour Fine Particulates (PM 2.5) Standard

Staff

Recommendation:

- Receive briefing on a draft letter from TPB, the Metropolitan Washington Air Quality Committee (MWAQC) and the COG Board of Directors to the Environmental Protection Agency (EPA) which will provide comments on the proposed inclusion of Montgomery and Prince George's Counties in the Baltimore non-attainment area.
- Authorize the TPB Chairman to sign the letter to EPA providing comments on the inclusion of Montgomery and Prince George's Counties in the Baltimore Metropolitan Area non-attainment designation. (MWAQC will also discuss the draft joint letter at its meeting scheduled for noon on January 28, 2009.)

Issues:

EPA's proposal could result in future air quality conformity issues in the Baltimore non-attainment area having an effect upon transportation planning processes in the Washington area (and vice versa).

Background:

The Board will be briefed on EPA's proposed inclusion of Montgomery and Prince George's

Counties in the designation of the Baltimore Metropolitan Area as being in non-attainment for the 2006 24-hour PM 2.5 standard. The Board will also be briefed on potential air quality conformity issues.

Draft - 1/21/2009

Mr. William T. Wisniewski
Acting Regional Administrator
U.S. EPA Region III
1650 Arch St.
Philadelphia, PA 19103-2029

Subject: Metropolitan Washington Region Comments on December 5, 2008
Proposal Re Non-Attainment Designation for Montgomery and Prince
George's County, Maryland

Dear Mr. Wisniewski:

On behalf of the Metropolitan Washington Council of Governments' Board of Directors, the National Capital Region Transportation Planning Board (TPB), and the Metropolitan Washington Air Quality Committee (MWAQC), we are writing to express our strong opposition to the action proposed on December 5, 2008 by U.S. EPA Region III to designate Montgomery County and Prince George's County, Maryland, as part of the Baltimore nonattainment area for the 2006 daily fine particle standard.

The Washington, DC-MD-VA region has successfully carried out coordinated air quality planning and transportation conformity analyses through the Metropolitan Washington Air Quality Committee (MWAQC) for nearly 20 years. Levels of ground-level ozone and fine particles have declined steadily as a result of the implementation of the region's air quality State Implementation Plans. The fact that the entire Washington region is meeting the 2006 daily fine particle standard and the Baltimore region is rapidly approaching attainment is a testament to the effectiveness of the planning process and associated implementation actions carried out by MWAQC and TPB in cooperation with Maryland, Virginia and the District of Columbia.

Based on the information provided below and in the attachment to this letter, we urge EPA Region III to designate Montgomery County and Prince George's County in attainment along with the rest of the metropolitan Washington region. The current coordinated air quality planning process represents the best and most effective means of achieving clean air for both the Washington and Baltimore regions.

Flawed Technical Analysis

The decision to designate Montgomery County and Prince George's County as part of the Baltimore nonattainment area was based on the same analysis that was used to reach the opposite conclusion in August. We believe that the technical analysis underlying the December 5th proposal is flawed. These flaws include use of preliminary emission inventory data, and an overestimated VMT growth for the affected counties. Please see Attachment A for a further explanation of the technical problems with EPA's data and analysis.

Baltimore region moving toward attainment of fine particle standard

Based on Maryland Department of the Environment's preliminary data for the Baltimore region, it appears that Baltimore is very close to attainment of the 2006 daily fine particle standard. Baltimore's data shows a downward trend, suggesting that fine particle levels in the Baltimore region are being reduced through the state's control measures. The decline in Baltimore's fine particle levels also suggest that upwind sources are effectively controlling emissions and that contribution is not a significant factor in Baltimore's "nonattainment" problem.

Commitment to Air Quality Improvements in the Washington Region

We in the Washington region are committed to improving air quality, meeting all applicable federal air quality standards, and doing our part to improve air quality in areas downwind of the region. MWAQC has successfully developed a number of carbon monoxide, ozone and fine particle air quality plans since the early 1990s. Washington area emissions have been declining and the monitors in the region show improvements for ozone and fine particles. Washington, DC-MD-VA region's monitors are showing attainment of both the 1997 and 2006 annual and daily fine particle standards.

Transportation Conformity

The transportation conformity analysis process in the Washington region has proceeded efficiently and smoothly for many years through coordination between MWAQC and the National Capital Region Transportation Planning Board ("TPB"). The proposed designation would significantly complicate transportation conformity in the Washington region by linking its conformity process to that of the Baltimore region, thereby precluding the continuation of independent transportation planning activities for the two Metropolitan Planning Organizations (MPOs).

MWAQC has been the vehicle for coordinating air quality planning in the Washington region since 1992. If the two counties must be designated nonattainment because of their significant contribution to Baltimore's problems, Virginia and the District transportation planning will be affected through the conformity process. Consequently, they must be able to participate in the air quality planning process and in establishing associated motor vehicle emissions budgets. This can best be accomplished through MWAQC.

Thank you for the opportunity to comment. We urge EPA Region III to reconsider its December 5, 2008 action and designate Montgomery County and Prince George's County, Maryland in attainment for the 2006 daily fine particle standard along with the rest of the Washington DC-MD-VA region. Our recommendation is consistent with the views of Montgomery and Prince George's Counties as well as the State of Maryland Department of the Environment.

Sincerely,

Penelope Gross, Chair
Board of Directors
Metropolitan Washington Council of Governments

Phil Mendelson, Chair
Metropolitan Washington Air Quality Committee

Charles Jenkins, Chair
National Capital Region Transportation Planning Board

cc:

Governor Martin O'Malley

Governor Tim Kaine

Mayor Adrian Fenty

Maryland Department of the Environment

Maryland Department of Transportation

District Department of Environment

District Department of Transportation

Virginia Department of Environmental Quality

Virginia Department of Transportation

Virginia State Air Pollution Control Board

Board of Directors, Metropolitan Washington Council of Governments

Metropolitan Washington Air Quality Committee

National Capital Region Transportation Planning Board

Interstate Air Quality Council

Baltimore Metropolitan Council

Judy Katz, EPA Region III

Attachment A

Technical Support Information for Letter to EPA Region III

We do not believe there is adequate technical support for EPA's December 5, 2008 proposal to include Montgomery and Prince George's County in the Baltimore nonattainment area. The following technical points need to be considered:

- 1) The current air quality control regions and planning processes are effectively controlling emissions and improving air quality. The Washington region attained the 2006 24-hour PM_{2.5} NAAQS in 2006. The Baltimore region may have attained the 2006 24-hour PM_{2.5} NAAQS in 2008.
- 2) There are significant new control programs that are being implemented now that will result in improved air quality in both regions, Baltimore and Washington, in 2009.
- 3) EPA's technical analysis demonstrating that Montgomery County and Prince George's County, Maryland, contribute significantly to the Baltimore's fine particle nonattainment is flawed because it relies on preliminary inventory data, and doesn't accurately characterize VMT and population growth in the affected counties.

Emissions Reductions and Improved Air Quality

Governments in the Washington region have taken steps to reduce emissions of ozone and fine particle precursors. Between 2002 and 2009, emissions were reduced by approximately 99.54 tons per ozone season day VOC and 235.17 tons per ozone season day NO_x. While SO₂ and PM_{2.5}-direct emissions increased 8,537.54 and 1,184.77 tons per year respectively during this period, SO₂ emissions are expected to decrease substantially once the Maryland Healthy Air Act starts providing benefits beginning 2009. This control program is further discussed below in this document. Sulfate and nitrate are the most important fine particles constituents in the Baltimore region, therefore, significant reductions in precursor emissions (SO₂ and NO_x) should cause further reductions in fine particle concentrations throughout the region.

Washington, DC and Baltimore Regions Close to Attaining the 2006 PM_{2.5} NAAQS

Air quality in the region has improved. Design values for both ozone and fine particles are decreasing over time even when weather conditions are favorable to their formation. This improvement is expected to continue from the programs committed to in the aforementioned air quality plans.

Currently, air quality monitoring data show that the Washington region is monitoring attainment of both the 1997 and 2006 fine particle NAAQS, see table below.

Design Values for the Washington, DC-MD-VA Nonattainment Area

| Period | Annual PM_{2.5} (µg/m³) | 24-Hour PM_{2.5} (µg/m³) | 8-Hour Ozone (ppb) |
|---------------|---|--|-------------------------------|
| 2003-05 | 14.6 | 38 | 91 |
| 2004-06 | 14.5 | 37 | 91 |
| 2005-07 | 14.2 | 35 | 91 |
| 2006-08 | - | - | 87 |

On January 12, 2009, EPA determined that the Metropolitan Washington, DC-MD-VA nonattainment area has attained the 1997 PM_{2.5} NAAQS. This determination is based upon quality assured, quality controlled, and certified ambient air monitoring data that show that the area has monitored attainment of the 1997 PM_{2.5} NAAQS since the 2004-2006 monitoring period, and continues to monitor attainment of the standard based on the 2005-2007 data. This action suspends the requirements for the area to submit attainment demonstrations and associated reasonably available control measures, reasonable further progress plans, contingency measures, and other planning SIPs related to attainment of the 1997 PM_{2.5} NAAQS for so long as the area continues to attain the 1997 PM_{2.5} NAAQS.

The Baltimore region is also very close to attaining the 2006 PM_{2.5} NAAQS suggesting that the control programs adopted in the region have been successful and that splitting up two independent air quality control regions solely to address pollutant transport is unwarranted. As shown in the table below, the design value of 36 µg/m³ for the period 2006-08 is based on three quarters worth of preliminary data for 2008. A very early preliminary assessment of the fourth quarter data indicates that the 2006-08 design value might come down to 35 µg/m³, which means that there is a possibility that the Baltimore region attained the 2006 24-hour PM_{2.5} standard in 2008.

Design Values for the Baltimore PM_{2.5} Nonattainment Area

| Period | 24-Hour PM_{2.5} (µg/m³) |
|---------------|--|
| 2003-05 | 41 |
| 2004-06 | 39 |
| 2005-07 | 37 |
| 2006-08 | 36* |

* Based on only three quarters worth of preliminary 2008 data provided by Maryland Department of the Environment as of January 15, 2009.

Baltimore's 24 hour PM_{2.5} monitor data shows a downward trend since 2005, dropping by 2 µg/m³ in each design value period.¹ The latest preliminary design value for 2006-2008 shows further improvement. Undoubtedly the downward trend in Baltimore's fine particle levels will continue due to the Healthy Air Act that will begin implementation this year. The downward trend of fine particle levels strongly suggests that control measures in Maryland SIPs as well as in the Washington, DC-MD-VA SIPs are working to improve air quality in both metropolitan areas. The decline in Baltimore's fine particle

levels also suggests that upwind sources are effectively controlling emissions (see discussion below) and that contribution is not a significant factor in Baltimore's "nonattainment" problem.

Significant New Control Programs Pending

Significant further improvement in air quality is anticipated as a result of implementation of Maryland's Healthy Air Act (HAA). The Maryland Healthy Air Act was developed with the purpose of bringing Maryland into attainment with the NAAQS for ozone and fine particulate matter by the federal deadline of 2010. The HAA requires reductions in nitrogen oxide (NO_x), sulfur dioxide (SO₂), and mercury emissions from large coal burning power plants. The HAA regulations became effective on July 16, 2007.

Over 95 percent of the air pollution emitted from Maryland's power plants comes from the largest and oldest coal burning plants. The emission reductions from the Healthy Air Act come in two phases. The first phase requires reductions in the 2009/2010 timeframe and, compared to a 2002 emissions baseline, reduce NO_x emissions by almost 70%, SO₂ emissions by 80%, and mercury emissions by 80%. The second phase of emission controls occurs in the 2012/ 2013 timeframe. At full implementation, the HAA will reduce NO_x emissions by approximately 75% from 2002 levels, and SO₂ emissions will be reduced by approximately 85% from 2002 levels.

In the past several years the Washington region has adopted and submitted SIPs that have significantly reduced emissions of ozone and fine particle precursors. Between 2002 and 2009, emissions were reduced by approximately 99.54 tons per ozone season day for VOC and 235.17 tons per ozone season day for NO_x. While SO₂ and PM_{2.5}-direct emissions increased 8,537.54 and 1,184.77 tons per year respectively during this period, SO₂ emissions are expected to decrease substantially once the Maryland Healthy Air Act starts providing benefits beginning 2009. This control program is further discussed below in this document. Sulfate and nitrate are the most important fine particles constituents in the Baltimore region, therefore, significant reductions in precursor emissions (SO₂ and NO_x) should cause further reductions in fine particle concentrations throughout the region.

Flawed Technical Analysis

EPA's August 18 technical analysis concluded that Montgomery and Prince George's County should be declared attainment along with the rest of the Washington region. The December analysis came to a different conclusion based on the same data. We believe that EPA's technical analysis underlying the December 5th proposal contains flawed analysis. Specifically, the analysis uses preliminary emission inventory data and it overestimates VMT growth for the affected counties.

EPA's technical analysis underlying the December 5th proposal is based on the 2005 National Emissions Inventory (NEI) version 1, a preliminary inventory that lacks the technical review and refinement of the base year 2002 inventory.

The trend in VMT also indicates whether a particular county is likely to contribute to the air quality problem in the future to a neighboring downwind region. We have concerns regarding the calculation for the “Nine Factor Analysis,” specifically that it overstates vehicle miles traveled (VMT) in Prince George’s County by 13%. Below is the table showing VMT in 2005 and 2007:

VMT Trends for Montgomery and Prince George's Counties

| County/City | VMT (millions) | | VMT Change (2005-07) |
|-----------------|----------------|-------|-------------------------|
| | 2005 | 2007 | |
| Montgomery | 7,513 | 7,473 | -0.5% |
| Prince George’s | 8,901 | 8,755 | -1.6% |

Source: [http://www.marylandroads.com/SHAServices/trafficReports/Vehicle Miles of Travel.pdf](http://www.marylandroads.com/SHAServices/trafficReports/Vehicle_Miles_of_Travel.pdf)

It is clear from the above table that the VMT has **declined** between 2005 and 2007 in these two counties. Together with cleaner fuels and vehicles, this must have led to a decline in emissions during this period. This trend is expected to continue in the future with the region promoting public transportation and the residents trying to avoid traffic congestion. With a growing number of cleaner vehicles running on cleaner fuels expected in the future, emissions contributions to downwind areas are only expected to be lower.

County Growth Trends for the Metropolitan Washington Region

The trend in population change of a county is an indicator of how that particular county will impact the air quality of areas located downwind in the future. Below is a table showing change of population in different counties in the metropolitan Washington region during the period 2005-07:

Regional Growth Trends for the Washington, DC Region

| County/city | Pop (2005) | Pop (2007) | Pop change |
|-----------------|---------------|---------------|------------|
| Montgomery | 921,016 | 930,813 | 1% |
| Prince George's | 838,156 | 828,770 | -1% |
| Calvert | 86,813 | 88,223 | 2% |
| Charles | 137,273 | 140,444 | 2% |
| Frederick | 219,443 | 224,705 | 2% |
| DC | 582,049 | 588,292 | 1% |
| Arlington | 199,761 | 204,568 | 2% |
| Fairfax | 1,005,616 | 1,010,241 | 0.5% |
| Loudoun | 253,631 | 278,797 | 10% |
| Prince William | 345,349 | 360,411 | 4% |
| Alexandria | 137,602 | 140,024 | 2% |
| Anne Arundel | 510,088 | 512,154 | 0.4% |
| Baltimore | 782,885 | 788,994 | 1% |
| Harford | 237,317 | 239,993 | 1% |
| Howard | 267,779 | 273,669 | 2% |

| | | | |
|---------|---------|---------|----|
| Carroll | 166,961 | 169,220 | 1% |
|---------|---------|---------|----|

Source: US Census Bureau web-site:

<http://www.census.gov/popest/counties/tables/CO-EST2007-01-24.xls>

It is clear from the above table that population change rate in Montgomery county is either same or less compared to most other jurisdictions in Baltimore and Washington regions. Population decreased in Prince George's county between 2005 and 2007. Assuming this trend continues these two counties are not expected to impact air quality of the Baltimore region adversely in the future based on population growth.

* * * * *

In conclusion, Montgomery County and Prince George's County should be designated in attainment and be included in the metropolitan Washington, DC-MD-VA air quality control region for the 2006 24-hour PM_{2.5} NAAQS. EPA should issue a Clean Data Determination for the Baltimore region once air quality monitoring data indicate it has attained the NAAQS. The two regions should then continue to strengthen air quality programs, including preparing redesignation requests and maintenance plans, as needed, to continue to improve air quality.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

DEC - 5 2008

Honorable Martin O'Malley
Governor of Maryland
100 State Circle
Annapolis, Maryland 21401

Dear Governor O'Malley:

On August 18, 2008, the U.S. Environmental Protection Agency (EPA) wrote to you regarding Maryland's recommendations on the status of fine particle pollution (PM_{2.5}) throughout the state. That letter transmitted the EPA's preliminary concurrence with most of Maryland's recommendations on air quality designations for the 2006 24-hour PM_{2.5} standard, submitted in your December 17, 2007 letter to EPA. EPA's August 18, 2008 letter also proposed to modify Maryland's recommendations for the Washington, District of Columbia (D.C.) area because, based upon 2005 to 2007 air quality monitoring data, the Washington, D.C. area is now in attainment. By letter dated August 28, 2008, the Honorable Shari T. Wilson, Maryland's Department of the Environment Secretary, relayed your concurrence with EPA's modifications.

On September 2, 2008, EPA published a notice in the Federal Register to solicit public comments on our intended area designations for the 2006 24-hour PM_{2.5} standard. Based upon public comment received, EPA determined that it was appropriate to further analyze the technical information used to support EPA's recommendations. This letter is to inform you that, based on EPA's further analysis of that technical information, EPA intends to make additional modifications to Maryland's December 17, 2007 recommendations regarding the Baltimore nonattainment area for the 2006 24-hour PM_{2.5} standard. Specifically, EPA intends to add Montgomery and Prince George's Counties, Maryland to the Baltimore nonattainment area. EPA is providing you with an opportunity to discuss such modifications with EPA prior to EPA's final designation determination relating to these counties.

EPA has enclosed a detailed description of the area where EPA intends to make additional modifications to Maryland's recommendations, and the basis for such additional modifications. Should you have additional information that you wish to be considered by EPA in this process, please provide it to EPA Region III by February 3, 2009.

EPA intends to take final action on the boundaries recommended for the Baltimore nonattainment area in EPA's August 18, 2008 modification letter (the City of Baltimore and Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties) on December 18, 2008.

EPA intends to make a final designation decision relating to inclusion of Montgomery and Prince George's Counties within the Baltimore nonattainment area for the 2006 24-hour PM_{2.5} standard on or before April 6, 2009.

If you have any questions, please do not hesitate to contact me or have your staff contact Ms. Judy Katz, Director of Region III's Air Protection Division, at 215-814-2654. EPA looks forward to a continued dialogue with you as we work together to implement the PM_{2.5} standards.

Sincerely,



Donald S. Welsh
Regional Administrator

Enclosures

cc: Honorable Shari T. Wilson, Secretary
Maryland Department of the Environment

Mr. George S. Aburn, Director
Air and Radiation Management Administration
Maryland Department of the Environment

Enclosure 1

**Maryland
Area Designations for the 2006 24-Hour
Fine Particle National Ambient Air Quality Standard**

The table below identifies the counties in Maryland that EPA intends to designate as not attaining the 2006 24-hour fine particle standard.¹ A county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to the violation of the standard.

| Area | Maryland Recommended Nonattainment Counties | EPA's Intended Nonattainment Counties |
|-----------|--|---|
| Baltimore | Anne Arundel County Baltimore City Baltimore County Carroll County Harford County Howard County | Anne Arundel County Baltimore City Baltimore County Carroll County Harford County Howard County Montgomery County Prince George's County |

EPA intends to designate the remaining counties as "attainment/unclassifiable."

¹ EPA designated nonattainment areas for the 1997 fine particle standards in 2005. In 2006, the 24-hour PM_{2.5} standard was revised from 65 micrograms per cubic meter (average of 98th percentile values for three consecutive years) to 35 micrograms per cubic meter. The level of the annual standard for PM_{2.5} remained unchanged at 15 micrograms per cubic meter (average of annual averages for three consecutive years).

Enclosure 2

Description of the Contributing Emissions Score

The Contributing Emissions Score (CES) is a metric that takes into consideration emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of counties in and near an area. Using this methodology, scores were developed for each county in and around the relevant metro area. The county with the highest contribution potential was assigned a score of 100, and other county scores were adjusted in relation to the highest county. The CES represents the relative maximum influence that emissions in that county have on a violating county. The CES, which reflects consideration of multiple factors, should be considered in evaluating the weight of evidence supporting designation decisions for each area.

The CES for each county was derived by incorporating the following significant information and variables that impact fine particle ($PM_{2.5}$) transport:

- Major $PM_{2.5}$ components: total carbon (organic carbon (OC) and elemental carbon (EC)), sulfur dioxide (SO_2), nitrogen oxides (NO_x), and inorganic particles (crustal).
- $PM_{2.5}$ emissions for the highest (generally top 5%) $PM_{2.5}$ emission days (herein called "high days" or "high $PM_{2.5}$ days") for each of two seasons, cold (October-April) and warm (May-September).
- Meteorology on high days using the NOAA HYSPLIT model for determining trajectories of air masses for specified days.
- The "urban increment" of a violating monitor, which is the urban $PM_{2.5}$ concentration that is in addition to a regional background $PM_{2.5}$ concentration, determined for each $PM_{2.5}$ component.
- Distance from each potentially contributing county to a violating county or counties.

A more detailed description of the CES can be found at
http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html#C.