Attachments

In the following attachments, the MDE presents additional data and rationale to support our original Option 2 designation recommendation where these designations differ from EPA's proposal. Theseconsist of Attachment 1, County Concerns. This attachment contains letters from county executives in Maryland requesting attainment designations consistent with the data in their counties. Attachment 2 is the rationale for MDE's request to designate Washington County as attainment. Included in Attachment 2 is additional data supporting the attainment designation for Washington County from the Hysplit Model Trajectory Analysis of days when fine particulate levels were significant enough to affect the annual average (identified as Attachment 3). Attachment 4 contains the rationale for requesting an attainment designation for Harford, Howard, Carroll, Frederick, Charles and Montgomery Counties.

Attachment 1:

County Concerns:

Attached to this letter are several letters that the MDE has received on behalf of the counties that would like to be considered as attainment or "secondary control counties". Please consider their requests as part of the overall request by MDE on their proposed attainment status.

The following counties request reconsideration of EPA's nonattainment designation:

Harford Howard Carroll Frederick Charles Montgomery Washington

0804-0150

H.

HOWARD COUNTY OFFICE OF THE COUNTY EXECUTIVE 3430 Courthouse Drive
Ellicott City, Maryland 21043
410-313-2013

James N. Robey, County Executive

MANAGEMENT ADMINISTRATION

AUG 16 2004

jnrobey@co.ho.md.us FAX 410-313-3051 TDD 410-313-2323

August 9, 2004

Thomas C. Snyder, Director Air and Radiation Management Administration Maryland Department of the Environment 1800 Washington Boulevard Baltimore, MD 21230

Dear Mr. Snyder:

I am writing in response to your August 4 letter regarding the designation of Baltimore area jurisdictions as either attainment or non-attainment with respect to the new Federal air quality standard for fine particulates.

I hereby request that the Maryland Department of the Environment (MDE) negotiate with the Federal Environmental Protection Agency (EPA) to secure for Howard County the designation of attainment for fine particulate matter. In making this request, I recognize that pollution from fine particulates is a regional problem requiring regional solutions. Accordingly, I acknowledge that regional controls may be necessary to mitigate pollution levels and that Howard County will support those initiatives.

Thank you for considering this request. If you wish to discuss this matter further, please contact Carl Balser, my empowered representative to the Baltimore Regional Transportation Board (BRTB) at 410-313-4310.

Sincerely,

in James N. Robey County Executive

cc:

Kendl P. Philbrick, Secretary, Maryland Department of the Environment BRTB Members Harvey Bloom, Director of Transportation, BMC George Aburn, Jr., Program Manager, Air Quality Planning & Monitoring, MDE Diane L. Franks, Deputy Program Manager, Air Quality Planning & Monitoring, MDE Brian Hug, Chief, Air Quality Policy & Planning, MDE Jim Vannoy, Executive Assistant Marsha S. McLaughlin, Director, DPZ Carl Balser, Chief, Division of Transportation Planning File: BRTB



designation for fine particulates. Harford County requests that the Maryland Department of Environment negotiate on our behalf with the Environmental Protection Agency to designate Harford County as an "attainment area".

After review of the information provided by your Department, it appears that a confined designation would be more beneficial. Since control measures would most likely be statewide, separation from other metropolitan jurisdictions would not adversely impact their situation.

Over the years, air quality designations have placed a tremendous public relations burden on the Baltimore Region, particularly in Harford County. As you know, Harford County is placed at a disadvantage simply due to our geographical location and meteorological conditions. Achieving the status of attainment for particulate matter would improve the misguided reputation of air quality in Harford County.

 Your support in this effort is greatly appreciated. If there is any additional information or assistance you may need, please feel free to contact my office. I look forward to hearing from you in the future.

Sincerely,

James M. Harkins

Harford County Executive

JMH/bb

copy: John J. O'Neill, Jr., Director of Administration Robert S. McCord, County Attorney C. Pete Gutwald, Chief, Comprehensive Planning Division

-> Preserving our values, protecting our future '>

220 SOUTH MAIN STREET BEL AIR, MARYLAND 21014 410.638.3350 • 410.879.2038 • FAX: 410.638.1387 • TTY 410.638.3086 • www.co.ha.md.us

0804-0152

CARROLL COUNTY MARYLAND Julia W. Gouge 225 N. Center Street President Westminster, Maryland 21157-5194 County Commissioner Westminster 410-386-2044 Baltimore 1-888-302-8978 FAX 410-386-2485 TT 410-848-9747 August 16, 2004 MANACE AUG 18 2004 Mr. Thomas C. Snyder, Director Air and Radiation Management Administration Maryland Department of the Environment 1800 Washington Boulevard

Dear Mr. Snyder:

Baltimore, MD 21230

I am writing in response to your letter dated August 4, 2004, concerning attainment status of counties in the Baltimore Region for fine particulates. Carroll requests that the Maryland Department of the Environment (MDE) negotiate with the Environmental Protection Agency (EPA) to secure for Carroll County the designation of attainment for fine particulate matter.

Thank you for notifying Carroll County of this issue and for considering this request. Please feel free to contact Jeanne Joiner, our empowered representative to the Baltimore Regional Transportation Board at 410-386-2145, concerning this issue.

Sincerely,

Junge Julia W. Gouge

President

cc: Kendl P. Philbrick, Secretary, Maryland Department of the Environment Baltimore Regional Transportation Board members Harvey Bloom, Director of Transportation Planning, Baltimore Metropolitan Council George (Tad) Aburn, Jr., Program Manager, Air Quality Planning and Monitoring Dean L. Minnich, County Commissioner Perry L. Jones, Jr., County Commissioner Steven D. Powell, Chief of Staff Steven C. Horn, Planning Director Jeanne S. Joiner, Project Coordinator



BOARD OF COUNTY COMMISSIONERS OF WASHINGTON COUNTY, MARYLAND

Washington County Administration Building 100 West Washington Street, Room 226 Hagerstown, Maryland 21740-4735 Telephone: 240-313-2200 FAX: 240-313-2201 Deaf and Hard of Hearing call: 7-1-1 for Maryland Relay Gregory I. Snook, *President* William J. Wivell, *Vice-President* James F. Kercheval John C. Munson Doris J. Nipps

September 1, 2004

Thomas C. Snyder, Director Air and Radiation Management Administration Maryland Department of the Environment 1800 Washington Boulevard Baltimore, Maryland 21230

Dear Mr. Snyder:

I am writing in response to your earlier letter concerning the designation of Washington County in a nonattainment status for fine particulates under the new Federal air quality standards.

I hereby request that the Maryland Department of the Environment (MDE) negotiate with the Federal Environmental Protection Agency (EPA) to secure for Washington County the designation of attainment for fine particulate matter. Washington County is making this request recognizing that pollution from fine particulates is a regional problem requiring regional solutions. Accordingly, Washington County acknowledges that regional controls may be necessary to mitigate pollution levels and that the County will support those initiatives.

Thank you for considering our request. If you wish to discuss the matter further, please contact Michael Thompson, Planning Director at 240-313-2432.

Sincerely, Gregory I. Snoo President

BOARD OF COUNTY COMMISSIONERS OF WASHINGTON COUNTY, MARYLAND

Commissioners (via e-mail)
 Rodney Shoop, County Administrator (via e-mail)
 Michael Thompson, Planning Director (via e-mail)
 George (Tad) Aburn, Jr., Program Manager, Air Quality Planning & Monitoring
 Brian Hug, Chief, Air Quality Policy & Planning, MDE

www.washco-md.net



Attachment 2:

Washington County Analysis

Washington County is of particular concern to MDE when it comes to the PM2.5 designation process. The MDE worked very closely with Washington County to ensure that EPA granted an Early Action Compact (EAC) under the 8-hour ozone standard. The elected officials of the county are engaged in the air quality process. The MDE believes that their active participation in the EAC process shows their air quality commitment. Having secured a successful EAC program in the county, the MDE believes that designating the county as nonattainment under the PM2.5 standard negates any of the perceived benefits of the EAC program. The incentive of not being labeled nonattainment is taken away. Being a largely rural county with few emissions, there are few sources to control in the county beyond those already subject to federal control programs. A nonattainment designation would simply add an administrative burden to both the county and the MDE.

Washington County as Part of the Washington Baltimore CMSA

MDE only recommended Washington County as part of a nonattainment area under "Option 1" because it was part of the Washington/ Baltimore CMSA. Based on the analysis attached to latest EPA recommendation letter is appears that EPA analyzed Washington County outside that context. The analysis connects Washington County to Berkeley County, West Virginia as part of a CBSA. MDE would like a better understanding as to why this analysis was completed in such a manner and why Washington County was left out of all the separate analysis tables attached to the recommendation letter explaining the rationale behind USEPA's recommendation. In addition, it does not appear that a similar technical analysis was completed for Washington County as part of the CBSA.

MDE reviewed the PM2.5 Designation Spreadsheets released by USEPA that provides all the technical data used during the designation process and found that Washington County was included in the proposed Washington DC nonattainment area. MDE is again concerned over why it appears the county was included in this spreadsheet but not in the tables attached to the recommendation letters. Regardless, when you sort the proposed Washington DC nonattainment area by total emissions it is apparent that Washington County has relatively low emissions when compared to some of the more populous counties in the region. MDE believes this is another reason why this county should not be designated nonattainment. Approximately 75% of the SO2 emissions (the primary driver in our regional nonattainment concern) in Washington County come from point sources that will be controlled via the CAIR or some form of federal rule. Similarly, approximately 70% of the mobile source emissions will be controlled by federal rule.

#	State	County	Total Emissions
1	MD	Charles	120061
2	MD	Montgomery	119592
3	MD	Prince Georges	118392
4	VA	Fairfax	81424
5	VA	Prince William	53232
6	DC	Washington	45672
7	MD	Frederick	38708
8	VA	Alexandria	32831
9	MD	Washington	<mark>31728</mark>
10	WV	Berkeley	18961
11	VA	Arlington	17245
12	VA	Loudoun	15955
13	VA	Stafford	12468
14	VA	Spotsylvania	11127
15	VA	Fauquier	10607
16	MD	Calvert	9000
17	WV	Jefferson	7751
18	VA	Warren	5769
19	VA	Culpeper	5482
20	VA	King George	3509
21	VA	Fredericksbur g	2991
22	VA	Clarke	2434
23	VA	Manassas	2340
24	VA	Fairfax (City)	1649
25	VA	Falls Church	971
26	VA	Manassas Park	544

Area of Influence Data

When looking at the scientific argument surrounding the county and their designation the MDE did some analysis on transport patterns and the impact that Washington County has on the connected CBSA counties located in West Virginia and vice versa. When looking at the top ten worst PM2.5 episode days in the past several years it is apparent that emissions from the west and south of the Washington County monitor located in Hagerstown have much more of an impact on the Berkeley Monitor than emissions from Washington County do to the other CBSA based nonattainment counties (please see the attached analysis). Using EPA's distance and influence method, Washington County also contributes little to the violating monitors of the CMSA due to distance.

Economic Vitality

Being a rural county with a small economic base, the cost of a nonattainment designation will be likely have a significant impact on the county and this is one of the reasons MDE pushed for EAC status under the 8-hour ozone standard. Western Maryland has lost a number of key manufacturing operations over the last two decades. Both the State and County economic development agencies work hard to keep interest levels high when potential sources find out what the environmental requirements for the County are as part of the Ozone Transport Region. The County's growth factors over the past decade indicate it is not one of the fringe counties of the CMSA under high development pressure. On the other hand, Berkeley County has at least twice the growth rate. For the sake of continuity it seems reasonable that Washington County be deemed attainment under the PM2.5 standard based on the science of transport and the economic/ continuity issues presented above and the fact that as part of the Washington/ Baltimore CMSA it is a very small piece. Attachment 4 presents further comments on the CMSA/MSA rationale.

Attachment 3: Hysplit Model Analysis for Washington County

Back Trajectories For the Martinsburg, WV (Berkeley County) PM2.5 Monitor

Top 10 Maximum PM2.5 Concentrations for 2000-2003

Purpose of Back Trajectories

- Want to determine the following:
 - Should a proposed PM2.5 non-attainment area include the Hagerstown, MD monitor and WV PM2.5 monitors?
- Used the Hysplit model to calculate back trajectories for the Martinsburg, WV PM2.5 monitor

Back Trajectory Information

- Hysplit Archive Trajectories
- Used the EDAS80 Data
- Back trajectories run for hours 12z and 20z
- Run time was 24 hrs
- Heights used:
 - 500 meters
 - 1,000 meters
 - 1,500 meters

Back Trajectory For June 26, 2003 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 62.0 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in central WV
- No Impact from Hagerstown, MD



Back Trajectory For June 26, 2003 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 62.0 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in central WV and KY
- No Impact from Hagerstown, MD



Back Trajectory For January 13, 2001(12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 55.7 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in central PA
- 500 meter back trajectory passes over Hagerstown, MD.



Back Trajectory For January 13 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 62.0 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was nearby
- No impact from Hagerstown, MD



Back Trajectory For July 1, 2002 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 49.7 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of was over WV and OH
- No Impact from Hagerstown, MD



Back Trajectory For July 1, 2002 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 49.7 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was over WV and OH
- No impact from Hagerstown, MD



Back Trajectory For February 9, 2000 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 47.9 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air KY, OH, and IN
- No impact from Hagerstown, MD



Back Trajectory For February 9, 2000 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 47.9 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in KY
- No Impact from Hagerstown, MD



Back Trajectory For November 8, 2000 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 47.3 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in WV, KY, and AL
- No Impact from Hagerstown, MD



Back Trajectory For November 8, 2000 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 47.3 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in VA, WV, and TN
- No impact from Hagerstown, MD



Back Trajectory For October 27, 2000 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 45.5 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in VA
- No impact from Hagerstown, MD



Back Trajectory For August 8, 2001 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 43.3 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in OH and MI
- No impact from Hagerstown, MD



Back Trajectory For June 25, 2002 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 43.1 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in PA and OH
- No impact from Hagerstown, MD



Back Trajectory For June 25, 2002 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 43.1 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in WV and PA
- No Impact from Hagerstown, MD



Back Trajectory For August 12, 2002 (12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 42.3 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in OH
- No impact from Hagerstown, MD



Back Trajectory For August 12, 2002 (20z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 42.3 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in OH
- No impact from Hagerstown, MD



Conclusions

- Direction of back trajectories (total of 20 cases)
 - West 2 cases
 - North 4 cases
 - SW 6 cases
 - NW 8 cases
- Only on January 13, 2001 did a back trajectory (500 meters) pass over Hagerstown, MD
 - See the next slide

Back Trajectory For January 13, 2001(12z)

- Monitor: Martinsburg, WV
- County: Berkeley
- Site ID: 54-003-0003
- 24-hr PM2.5 Concentration: 55.7 ug/m3
- Back Trajectory Run Time: 24 hrs
- 24-hrs ago parcel of air was in central PA
- 500 meter back trajectory passes over Hagerstown, MD.



Forward Trajectory Started on January 12, 2001 (12z)

- Hagerstown, MD forward trajectory shows were the parcel of air will end up on January 13, 2001at 12z
- Air parcel passes by Martinsburg, WV.
- How much PM2.5 mixes down?



Forward Trajectory Started on January 12, 2001 (20z)

- Hagerstown, MD forward trajectory shows were the parcel of air will end up on January 13, 2001at 20z
- Slow wind speeds.
- Air parcel passes by Martinsburg, WV



Attachment 4:

Rationale for Attainment Status for Counties in the Baltimore and Washington Primary MSAs.

CMSA Flaws

One of the basic flaws in the designation process revolves around the CMSA based nonattainment concept. While connecting counties via jurisdictional boundaries presents a sound attempt at producing regional planning it should be noted that political and census based boundaries are not the best scientific boundaries for air quality planning.

Control Commitment:

Maryland proposed an innovative designation design under our "option 2" scenario and we would like to explain some additional concepts we have in terms of how we propose controls for the region. As we have stated during the designation process we believe that all the counties located near nonattainment areas should control their emissions at the same rates as the nonattainment areas. In our option we concluded that all the CMSA based connected counties should be considered a secondary control region. The MDE believes that some form of commitment is necessary for these counties to participate in this option. Our current concept is to set up a formal MOU system or some kind of written commitment process by which the counties that are deemed secondary control counties commit to all the nonattainment controls (such as transportation conformity).

Emissions Analysis:

MDE performed a comprehensive review of the emissions data used in the nonattainment designation analysis performed by USEPA. On a whole, the emissions analysis is applied equitably. However, the emissions analysis in combination with several others of the nine factors invariably leads to a recommended designation of nonattainment for a highly populated county in general because the area source inventory in many cases uses population as the activity factor in the emissions estimation process. For example, higher populations lead to higher VMT scores and higher emission totals. It also weights the emissions aspect disproportionately. The emissions analysis needs to be further examined for direct influence of the PM2.5 problem that can be affected by local controls.

Emissions density and emission totals

If you look at the counties on strictly an emissions density or an emissions total basis there are two counties that are obviously at the top of the list when it comes to emissions and the remaining counties contain far fewer emissions. However, when you remove all the point source SO2 emissions from the emissions totals (since these emissions are likely from large power plants that will be controlled via federal rule) the emissions totals for the larger two counties with higher emissions drop considerably. <u>Table 1:</u> EPA Proposed Nonattainment Counties (excluding those that monitor nonattainment)

EPA Reg	ST	COU	Emissions Totals	Emissions per Pop Density
eparegion	stpostal	county_name		
3	MD	Charles	120,061	428.8
3	MD	Montgomery	119,592	65.0
3	MD	Howard	24,907	24.1
3	MD	Washington	31,728	108.3
3	MD	Carroll	28,353	80.1
3	MD	Frederick	38,708	122.9
3	MD	Harford	23,198	44.8

<u>Table 2:</u> EPA Proposed Nonattainment Counties (excluding those that monitor nonattainment) with point source SO2 and NOx emissions removed

	ST	Area		
EPA Reg		COU	Emissions Totals	Emissions per Pop Density
3	MD	Montgomery	77,444	42.1
3	MD	Frederick	28,813	91.5
3	MD	Charles	26,326	94.0
3	MD	Washington	23,076	78.8
3	MD	Howard	22,883	22.2
3	MD	Harford	22,795	44.0
3	MD	Carroll	21,568	60.9

In addition to the drastic change in emissions when you remove the SO2 and NOx from point sources from the emissions totals there is also a drastic change in the emissions per population density scores. Large population centers create higher emissions simply based on population density and VMT. It should be noted that Maryland has dense counties that are not monitoring nonattainment (Montgomery and Harford). MDE believes that this fact exemplifies that fact that the local contribution from these counties is not very significant when applied to a relatively high regional load. So in essence, forcing the state or the counties to control their local contribution in a county where the local contribution is not creating high monitored values is not equitable.

Emissions contributing vs. emissions that we can control (local vs. regional)

Another concern that Maryland has with the emissions analysis that should play a part in the attainment/ nonattainment process revolves around what types of emissions are playing the largest role in each of the counties. The key question is what are the contributing emissions and can they be controlled at the local level.

It has been determined that the vast majority of the urban excess emissions come from carbon and MDE agrees with this determination. Mobile sources are high emitters of carbon-based emissions and Maryland is concerned that too much attention is being placed on this factor as states are not able to establish standards for motor vehicles. In essence, the USEPA is designating areas based on mobile sources that are controlled at the federal level. This presents a conundrum where states are set up to develop control plans based on a nonattainment designation when the nonattainment status is caused by a source sector that is not really under local control.

Since the large regional load coming in to Maryland is relatively high it is important to remember that SO2 is the primary force behind our attainment problems and SO2 largely comes from large power plants. Between the proposed federal transport rules (CAIR) and our commitment to comprehensively control our own sources, high SO2 emissions should be looked at more fairly. In general, this is another source sector that is best controlled regionally through federal regulation with states controlling smaller SO2 sources as best as possible. If a county has high SO2 emissions and the vast majority of the emissions are coming from large point sources (for ex. Charles, Montgomery, Washington) deeming these counties nonattainment for the purpose of trying to apply emissions control at the local level is not equitable.

Percentage growth vs. total CMSA

One of the factors that may drive a county into nonattainment is the expected growth of that county. Aside from the fact that population growth is not something that the state air agency can control, 80-90% of the CMSA already exists as it will exist in the future. And 80-90% of the emissions are generated based on that core population. Even counties with extremely high growth rates will not change this overall picture because the added population is still a tiny percentage of the whole. It should be noted that some of the highest growing counties in the PM2.5 analysis remain relatively rural counties that are a small piece of the CMSA population total. For example, Harford and Carroll Counties show a 1990 to 2000 growth rate of 20 and 22% respectively. However, their population totals combined are still less that ½ that of Baltimore County. Just because a county has a high growth rate does not mean it is a large part of the total CMSA population. For this reason MDE thinks that Carroll, Harford, Howard, Frederick, Charles and Washington Counties do not appear nonattainment based on population growth.