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

JUN 29 2004

The Honorable Bob Wise
Governor of West Virginia
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305

Dear Governor Wise:

Fine-particle pollution represents one of the most significant barriers to clean air facing our nation today. These tiny particles – about 1/30th the diameter of a human hair – have been scientifically linked to serious human health problems. Their ability to be suspended in air for long periods of time makes them a public health threat far beyond the source of emissions, An important part of our nation's commitment to clean, healthy air deals with reducing levels of this fine particle or $PM_{2.5}$ pollution.

In February, your State submitted its recommended boundaries for $PM_{2.5}$ attainment and nonattainment areas. We have thoroughly reviewed your recommendations and the technical information you have submitted to support your recommendations. We appreciate the effort your State has made to develop this supporting information. Consistent with the Clean Air Act, this letter is to notify you that based on the information contained in your submittal, the Environmental Protection Agency (EPA) agrees with your recommended nonattainment designations and boundaries for most counties, but intends to **modify** your recommended designations and boundaries for some counties, as described in the enclosure discussed below.

Your Environmental Commissioner will receive a copy of this letter with a more detailed enclosure containing a description of areas where EPA intends to modify your State recommendations, and the basis for such modification. Should you have additional information that you wish to be considered by EPA in this process, we request that you provide it to us by September 1,2004.

You will hear from us again in November when EPA takes the final step in the $PM_{2.5}$ designation process and determines those areas that are in attainment (or unclassifiable) and those areas that are nonattainment. For areas in attainment, the challenge will be not only to maintain, but also to continue the progress you have made toward clean air. It is a commitment to no backsliding in your State's clean air status for fine particles. EPA will also issue a proposed fine particle implementation rule prior to final designations, which will allow you to proceed with planning to achieve clean air.

The Bush Administration is addressing fine particle pollution with a comprehensive national clean air strategy. This strategy includes EPA's recent rule to reduce pollution from nonroad diesel engines, and the proposed rule to reduce pollution from power plants in the eastern United States. These two rules are important components of EPA's efforts to help States and localities meet the more protective national fine-particle and 8-hour ozone air quality standards. Together these rules will help all areas of the country achieve cleaner air.

Should you or your staff have any questions, I invite you to contact our Regional Air Office. We look forward to a continued dialogue with you as we work together to implement the $PM_{2.5}$ standards.

Sincerely,

Donald S. Welsh

Donald S. Welsh
Regional Administrator

Enclosures

cc w/Enclosures: The Honorable Stephanie Timmermeyer, Secretary, WVDEP

Enclosure A

The fourth column of the following table identifies the individual counties within West Virginia that EPA intends to designate as nonattainment.

Area	**West Virginia Counties in 1999 Metropolitan Statistical Area**	**State of West Virginia Recommendation**	**EPA Recommendation of West Virginia Counties**
Charleston	Kanawha Putnam	Kanawha Putnam	Kanawha Putnam Mason
Huntington WV-KY-OH	Cabell Wayne	Cabell Wayne	Cabell Wayne
Marion County, WV (Fairmount)	Marion	Marion	Marion Monongalia Harrison
Parkersburg, WV-OH	Wood	Wood	Wood Pleasants
Steubenville, OH-WV	Brooke Hancock	Brooke Hancock	Brooke Hancock
Hagerstown, MD	Berkeley (Washington,MD)	Berkeley	Berkeley
Wheeling WV-OH	Marshall Ohio	Marshall Ohio	Marshall Ohio
Total Number of Counties	11	11	15

*** We have included in our recommended nonattainment areas a county or counties in your state that are contiguous to a CMSA or MSA with a violating monitor, that are generally rural in character, and that contain an identifiable large emitting facility or facilities (e.g., power plants) which we believe contribute to the nearby nonattainment problem. We have included these counties in our initial recommendations in order to ensure that a sufficient portion of those counties, including such large facilities, is included within the boundaries of the nonattainment area as part of the final designations. We invite you to submit to us a recommendation as to what portion of such contiguous counties, encompassing the large facility or facilities, should be designated nonattainment. The counties in your state which we have included for this purpose are Mason, Harrison, Monongalia, and Pleasant.s**

Enclosure B

State Summary

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended 12 counties as nonattainment. Additional data was provided by West Virginia on June 3, 2004. In the June 3 correspondence, West Virginia revised its recommendation to 11 counties; excluding Jefferson County from the nonattainment recommendation.

Based on the air quality data for the years 2001-2003, there are seven presumptive fine particulate ($PM_{2.5}$) nonattainment areas consisting of 11 counties in West Virginia. EPA agrees with the recommendation that all 11 counties be designated nonattainment. In addition, EPA intends to modify the recommendations for the Charleston, Marion County, and Parkersburg areas with the addition of four adjacent counties. The following provides a rationale for EPA's intended modification to the West Virginia recommendations.

Charleston Area

Discussion

The Charleston Metropolitan Statistical Area (MSA) is comprised of two counties: Putnam and Kanawha. Kanawha County, part of the MSA has monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 $\mu g/m^3$. Based on the monitored violations, the Charleston MSA is considered a presumptive nonattainment area. Kanawha County has monitored 17.1 $\mu g/m^3$ for the time period 2001-2003. This monitor is intended to be used as the Design Value monitor for the Charleston nonattainment area.

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended the two MSA counties to be included in the Charleston nonattainment area. EPA has reviewed the State's recommendations as well as additional data provided by West Virginia on June 3, 2004 and agrees with the original recommendation. EPA agrees with the recommendation to include these two counties. EPA, however, intends to add an adjacent county, Mason, to the nonattainment area.

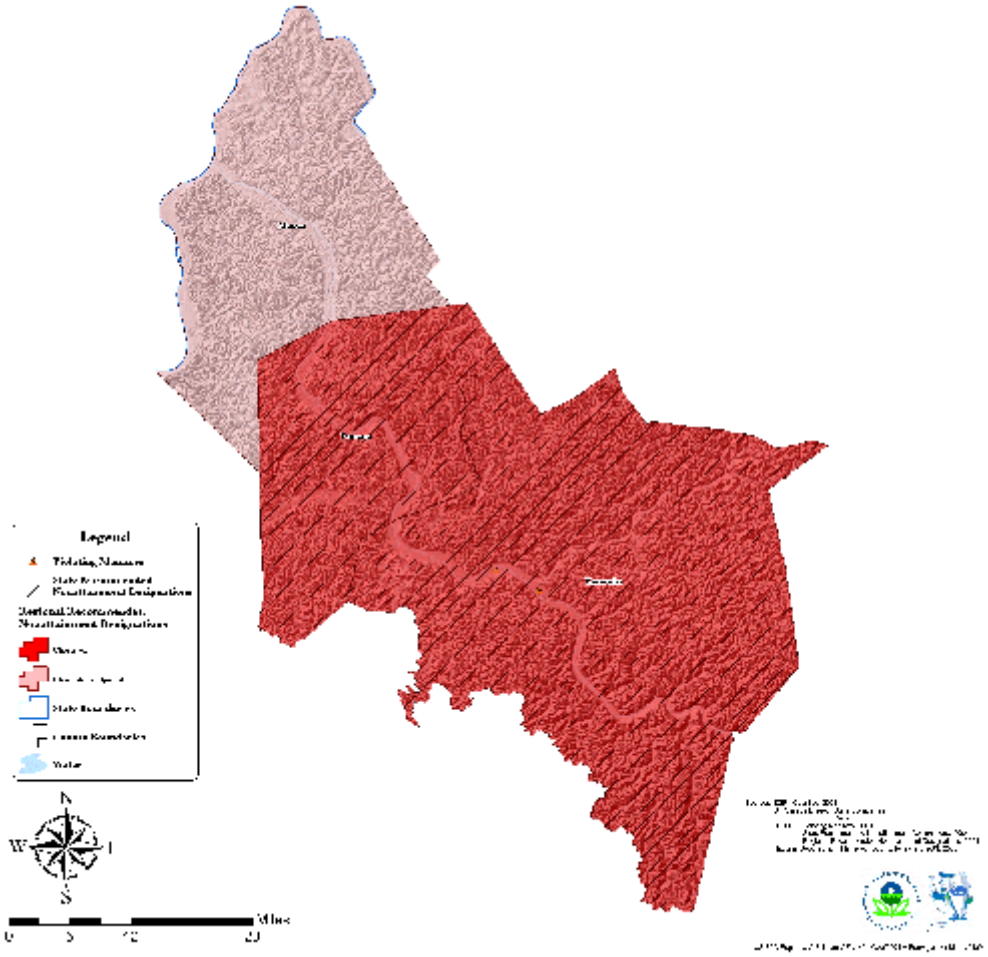
Summary of Evaluation

Based on weighted emissions screening, EPA has identified Jackson, Roane, Clay, Nicholas, Fayette, Raleigh, Boone and Lincoln to have relatively low emissions contribution to the metropolitan area. A review of the remaining factors, including monitored attainment in Raleigh County, provides additional evidence for the designation of attainment for these surrounding counties.

Mason and Putnam counties, however, show higher contribution to the area, based on the weighted emissions factor. Therefore, EPA has reviewed these counties based on the remaining 8 factors to determine the appropriate designation. Putnam County, part of the MSA, and Mason, an adjacent county, show comparable emissions and similar air quality estimates. The population density and commuting patterns of Mason when compared to the core MSA counties in this area are not, however, substantial.

As seen in the attached data summary, considering wind and distance, Mason County has twice the estimated emission contribution as the next highest attainment county. Mason County is located between the Huntington presumptive nonattainment area and the Charleston presumptive nonattainment area. The addition of Mason County to the Charleston area creates a contiguous area. As seen in the topographic map below, the natural advective air flow along the Kanawha River valley may also enhance the contribution of emissions from Mason County into the nonattainment area.

Charleston Area $PM_{2.5}$ Recommended Nonattainment Designations



EPA intends, based on this review, to modify the West Virginia recommended nonattainment boundary and include Mason County with the Charleston MSA. A summary of the data which supports the addition of Mason County to the State's recommendation is provided below.

EPA Reg	ST	COUNTY	State Recommend $PM_{2.5}$ Designation	EPA INTENDED $PM_{2.5}$ DESIGNATION	Area - '99 C/MSA
C/MSA Total (excluding surrounding) = 2 counties					
3	**WV**	**Putnam**	**Nonattainment**	**Nonattainment**	**Charleston, WV**
3	**WV**	**Kanawha**	**Nonattainment**	**Nonattainment**	**Charleston, WV**
3	WV	Mason	Attainment	Nonattainment	
3	WV	Fayette	Attainment	Attainment/unclassifiable	
3	WV	Raleigh	Attainment	Attainment/unclassifiable	
3	WV	Jackson	Attainment	Attainment/unclassifiable	
3	WV	Nicholas	Attainment	Attainment/unclassifiable	
3	WV	Boone	Attainment	Attainment/unclassifiable	
3	WV	Lincoln	Attainment	Attainment/unclassifiable	
3	WV	Roane	Attainment	Attainment/unclassifiable	
3	WV	Clay	Attainment	Attainment/unclassifiable	
3	WV	Logan	Attainment	Attainment/unclassifiable	
3	WV	Wyoming	Attainment	Attainment/unclassifiable	
3	WV	Mingo	Attainment	Attainment/unclassifiable	
3	WV	Braxton	Attainment	Attainment/unclassifiable	
3	WV	Calhoun	Attainment	Attainment/unclassifiable	

Factor 1: Emissions Sorted Highest to Lowest Weighted Emissiosns Factor

EPA Reg	ST	COUNTY	Total Emissions, 2001 (tons)							Weighted Emisssions
			PM	SO2	NOX	VOC	Amm	Carbon	Crustal	
3	**WV**	**Putnam**	**4,395**	**80,150**	**39,795**	**3,752**	**97**	**1,165**	**2,604**	**51.5**
3	**WV**	**Kanawha**	**2,683**	**24,109**	**27,119**	**16,506**	**396**	**1,266**	**1,182**	**48.5**
3	WV	Cabell	2,365	5,155	27,903	7,080	181	1,318	774	48.5
3	WV	Mason	3,610	70,053	31,327	2,831	264	899	2,162	40.6
3	WV	Fayette	1,536	4,485	5,065	3,134	100	479	950	17.4
3	WV	Raleigh	930	456	4,595	5,220	170	472	417	16.8
3	WV	Jackson	1,780	3,464	3,947	2,394	158	451	1,128	16.3
3	WV	Wayne	550	1,023	6,485	2,620	56	317	199	11.6
3	WV	Logan	410	152	1,620	2,158	49	214	181	7.6
3	WV	Nicholas	434	193	1,102	1,720	84	206	208	7.2
3	WV	Wyoming	470	430	3,981	1,807	142	197	238	7.2
3	WV	Boone	412	118	1,571	1,298	30	197	190	7.0
3	WV	Mingo	437	281	2,842	1,379	150	191	217	6.9
3	WV	Braxton	312	138	2,265	1,597	91	185	109	6.6
3	WV	Lincoln	259	67	1,314	1,128	37	143	108	5.1
3	WV	Roane	213	106	1,083	1,108	99	119	87	4.2
3	WV	Clay	155	41	533	542	28	94	57	3.3
3	WV	Calhoun	114	43	937	512	35	68	42	2.4

Factor 2 Air Quality

EPA Reg	ST	COUNTY	Design Values						Estimated Air Quality based	
			'01-'03		'00-'02		'99-'01		Maximum Estimate (inc. real)	#viol pts / #total pts
3	**WV**	**Putnam**	NO MONITOR						**17.1**	**5/5**
3	**WV**	**Kanawha**	**17.1**	**NA**	**17.8**	**NA**	**18.4**	**NA**	**17.8**	**12/15**
3	WV	Mason	NO MONITOR						17.1	8/8
3	WV	Fayette	NO MONITOR						14.3	0/9
3	WV	Raleigh	13.1	A	13.5	A	14.0	A	14.4	0/10
3	WV	Jackson	NO MONITOR						16.6	8/8
3	WV	Nicholas	NO MONITOR						14.0	0/9
3	WV	Boone	NO MONITOR						16.0	5/7
3	WV	Lincoln	NO MONITOR						16.7	6/6
3	WV	Roane	NO MONITOR						16.0	6/6
3	WV	Clay	NO MONITOR						14.9	0/5

Factor 3: Population Density and Degree of Urbanization

Sorted by Population Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	**WV**	**Kanawha**	**195,790**	**903**	**217**
3	WV	Raleigh	78,899	607	130
3	**WV**	**Putnam**	**52,230**	**346**	**151**
3	WV	Fayette	47,129	664	71
3	WV	Jackson	28,204	466	61
3	WV	Nicholas	26,404	649	41
3	WV	Mason	26,004	432	60
3	WV	Boone	25,554	503	51
3	WV	Lincoln	22,256	438	51
3	WV	Roane	15,267	484	32
3	WV	Clay	10,357	342	30

Sorted by Population Density Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	**WV**	**Kanawha**	**195,790**	**903**	**217**
3	**WV**	**Putnam**	**52,230**	**346**	**151**
3	WV	Raleigh	78,899	607	130
3	WV	Fayette	47,129	664	71
3	WV	Jackson	28,204	466	61
3	WV	Mason	26,004	432	60
3	WV	Boone	25,554	503	51
3	WV	Lincoln	22,256	438	51
3	WV	Nicholas	26,404	649	41
3	WV	Roane	15,267	484	32
3	WV	Clay	10,357	342	30

Factor 4: Commuting Pattern

Sorted by VMT Highest to Lowest

EPA Reg	ST	COUNTY	VMT	Commuting to Other Metro	
			2002	Percent	Number
3	**WV**	**Kanawha**	**2,600**	**4**	**3,500**
3	WV	Raleigh	1,028	2	643
3	WV	Fayette	605	12	1,904
3	**WV**	**Putnam**	**578**	**48**	**11,367**
3	WV	Jackson	511	19	2,152
3	WV	Nicholas	359	5	468
3	WV	Boone	300	35	2,972
3	WV	Mason	270	8	763
3	WV	Roane	183	25	1,319
3	WV	Lincoln	154	33	2,324
3	WV	Clay	116	30	925

Sorted by Number of Commuters Highest to Lowest

EPA Reg	ST	COUNTY	VMT	Commuting to Other	
			2002	Percent	Number
3	**WV**	**Putnam**	**578**	**48**	**11,367**
3	**WV**	**Kanawha**	**2,600**	**4**	**3,500**
3	WV	Boone	300	35	2,972
3	WV	Lincoln	154	33	2,324
3	WV	Jackson	511	19	2,152
3	WV	Fayette	605	12	1,904
3	WV	Roane	183	25	1,319
3	WV	Clay	116	30	925
3	WV	Mason	270	8	763
3	WV	Raleigh	1,028	2	643
3	WV	Nicholas	359	5	468

Factor 5 Counties sorted by Growth Rate - Highest to Lowest

EPA Reg	ST	COUNTY	Population			VMT	
			2002	Growth '90-'00	Pct chng '90-'00	Growth '02-'10	Pct chng '02-'10
3	**WV**	**Putnam**	**52,230**	**8,754**	**20**	**53**	**9**
3	WV	Jackson	28,204	2,062	8	-231	-45
3	WV	Mason	26,004	779	3	23	9
3	WV	Raleigh	78,899	2,401	3	-199	-19
3	WV	Lincoln	22,256	726	3	141	92
3	WV	Clay	10,357	347	3	21	19
3	WV	Roane	15,267	326	2	26	14
3	WV	Fayette	47,129	-373	-1	-18	-3
3	WV	Nicholas	26,404	-213	-1	-50	-14
3	WV	Boone	25,554	-335	-1	24	8
3	**WV**	**Kanawha**	**195,790**	**-7,546**	**-4**	**432**	**17**

Factors 6 and 7 Meteorology and Geography/Topography

EPA Reg	ST	COUNTY	Weighted Emissions Factor	Weighted Emissions Considering Wind and Distance	LCC x	LCC y	Delta X	Delta Y	Dist	Quad
	Charleston, WV				703.539	-139.801				
3	**WV**	**Kanawha**	**51.5**	**53.5**	684.084	-125.575	**-19.455**	**14.226**	**24.101**	**NW**
3	**WV**	**Putnam**	**48.5**	**47.0**	718.855	-141.587	**15.316**	**-1.786**	**15.420**	**SE**
3	WV	Cabell	**48.5**	**22.3**	655.791	-136.011	**-47.748**	**3.790**	**47.899**	NW
3	WV	Mason	**40.6**	**16.6**	666.686	-100.631	**-36.853**	**39.170**	**53.781**	NW
3	WV	Jackson	**17.4**	**7.0**	761.079	-169.717	**57.540**	**-29.916**	**64.853**	SE
3	WV	Wayne	**16.8**	**6.7**	749.528	-201.585	**45.989**	**-61.784**	**77.021**	SE
3	WV	Lincoln	**16.3**	**5.3**	699.948	-88.532	**-3.591**	**51.269**	**51.395**	NW
3	WV	Fayette	**11.6**	**4.8**	645.007	-174.098	**-58.532**	**-34.297**	**67.840**	SW
3	WV	Logan	**7.6**	**4.8**	689.452	-199.735	**-14.087**	**-59.934**	**61.567**	SW
3	WV	Raleigh	**7.2**	**4.1**	780.613	-138.555	**77.074**	**1.246**	**77.084**	NE
3	WV	Boone	**7.2**	**3.2**	723.261	-218.620	**19.721**	**-78.819**	**81.249**	SE
3	WV	Mingo	**7.0**	**3.1**	707.164	-178.274	**3.625**	**-38.473**	**38.644**	SE
3	WV	Roane	**6.9**	**1.8**	666.919	-217.252	**-36.620**	**-77.451**	**85.672**	SW
3	WV	Nicholas	**6.6**	**1.7**	782.839	-97.909	**79.300**	**41.892**	**89.685**	NE
3	WV	Wyoming	**5.1**	**1.6**	673.904	-162.569	**-29.635**	**-22.768**	**37.371**	SW
3	WV	Clay	**4.2**	**1.1**	728.164	-99.151	**24.625**	**40.650**	**47.527**	NE
3	WV	Braxton	**3.3**	**1.1**	756.227	-121.685	**52.688**	**18.116**	**55.716**	NE
3	WV	Calhoun	**2.4**	**0.6**	746.693	-84.033	**43.154**	**55.768**	**70.515**	NE

Wind Direction and Distance Weighting; The weighted emissions ranking of counties considers the contribution of pollutants to the "urban excess" of the MSA on a speciated basis. The general form of the ranking considers each county in the same way, regardless of direction and distance from the violating monitor. To account for the effect of direction and distance in a simplistic way a modified emissions score was calculated as follows. For each county in and adjacent to the MSA the distance and general direction (expressed as a compass quadrant) of the county centroid to the MSA's design value monitor were determined. For each county a 10-year or longer average frequency of occurrence of the wind direction quadrant was derived. The county's weighted emissions score was modified by multiplying the score by the percentage of the wind direction from the county centroid to the design value monitor and divided by the distance in kilometers. For example, if the wind frequency was 25% and the distance was 50 kilometers, the emissions score would be modified by the fraction of 25 ? 50, or 0.5. The cumulative percentages were then calculated by normalizing by the sum of the modified emissions scores.

Factor 8: Jurisdictional Boundaries The 1999 MSA was expanded in 2003 to include Lincoln, Boone and Clay counties. The review of these counties, however, did not provide sufficient evidence to include these counties in the nonattainment area. The Charleston area has recently been designated nonattainment for the 8-hour ozone standard. Similar to the fine particulate monitoring, Kanawha monitored a violation of the 8-hour ozone standard. Kanawha and Putnam were included in the ozone nonattainment area.

Factor 9: Level of Control identified large sources greater than 1000 tons per year for any pollutant and evaluated its distance to a violating monitor for fine particulate. This screening identified the closest large source to be 37 miles from the Kanawha violating monitor. West Virginia has provided additional information on the level of control of the Mountaineer and Philip Sporn power plants. There was a reduction in NOx in 2002 due to installation of NOx controls on the Mountaineer plant (1300 MW). Additional SO2 controls are also planned in 2007 for this plant. The Philip Sporn plant (1050 MW) does not currently, nor have plans to install, state of the art controls. A review of the reductions from the controls added to Mountaineer does not substantially change the estimated emissions contribution to the nonattainment area.

Huntington Ashland (KY-WV-OH) Area

Discussion

The Huntington Metropolitan Statistical Area (MSA) is comprised of six counties including two counties in West Virginia. Two counties in this MSA have monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 $\mu g/m^3$. Based on the monitored violations, the Huntington MSA is considered a presumptive nonattainment area. Cabell County, WV is part of the MSA and monitored 16.6 $\mu g/m^3$ for the time period 2001-2003. This value is being considered the Design Value for the nonattainment area.

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended the two MSA counties to be included in the Huntington nonattainment area. EPA has reviewed the State's recommendations as well as additional data provided by West Virginia on June 3, EPA agrees with the recommendation to include Cabell and Wayne counties. Additional counties in Kentucky and Ohio have been reviewed and designated by EPA Regions 4 and 5, respectively. A summary of the designations is found in the table below, however; data and analysis on those counties are found in separate documents generated by each respective region.

Summary of Evaluation

Based on weighted emissions, EPA estimates that Mingo and Lincoln counties, adjacent to the Huntington MSA have relatively low emissions contribution to the metropolitan area. A review of the remaining factors provided additional evidence for the designation of attainment for these surrounding counties.

Data supporting EPA's intended designation for the West Virginia counties as part of the Huntington nonattainment area is provided below.

SUMMARY OF FACTOR 1: EMISSIONS Huntington-Ashland, WV-KY-OH MSA

**** Counties Listed by Percent Contribution to Harrisburg CMSA****

EPA Reg	ST	COUNTY	Total Emissions, 2001 (tons)							Weighted Emisssions Factor	EPA Intent $PM_{2.5}$ Designation
			PM	SO2	NOX	VOC	Amm	Carbon	Crustal		
5	OH	Gallia	10,010	164,984	61,079	1,839	300	2,171	6,238	141.4	Nonattainment
5	OH	Adams	6,417	125,136	52,992	1,508	431	1,435	3,973	102.4	Nonattainment
5	KY	Lawrence	2,903	56,066	21,265	919	56	745	1,718	48.3	Nonattainment
3	**WV**	**Cabell**	**2,365**	**5,155**	**27,903**	**7,080**	**181**	**1,318**	**774**	**40.3**	**Nonattainment**
5	**KY**	**Boyd**	**2,314**	**11,740**	**13,478**	**8,620**	**467**	**689**	**1,242**	**25.2**	**Nonattainment**
5	*OH*	*Scioto*	*1,053*	*2,790*	*5,566*	*4,703*	*350*	*400*	*559*	*12.5*	*Nonattainment*
3	**WV**	**Wayne**	**550**	**1,023**	**6,485**	**2,620**	**56**	**317**	**199**	**9.6**	**Nonattainment**
5	**KY**	**Greenup**	**477**	**2,519**	**4,336**	**1,795**	**156**	**295**	**160**	**9.5**	**Attainment/uincl**
5	**OH**	**Lawrence**	**770**	**841**	**4,399**	**4,366**	**207**	**293**	**379**	**8.6**	**Attainment/uincl**
5	KY	Lewis	429	469	2,873	990	222	285	121	8.1	Attainment/unclass
5	**KY**	**Carter**	**506**	**237**	**2,615**	**1,996**	**223**	**242**	**249**	**6.8**	**Attainment/uincl**
5	OH	Pike	425	4,203	2,081	1,311	149	172	237	6.8	Attainment/unclass
5	KY	Rowan	336	313	1,691	1,535	91	204	123	5.7	Attainment/unclass
3	WV	Mingo	437	281	2,842	1,379	150	191	217	5.5	Attainment/unclass
5	OH	Jackson	404	461	1,320	1,717	165	164	219	4.7	Attainment/unclass
5	KY	Martin	281	661	1,236	706	762	136	131	4.0	Attainment/unclass
3	WV	Lincoln	259	67	1,314	1,128	37	143	108	4.0	Attainment/unclass
5	KY	Elliott	164	115	393	313	42	114	46	3.1	Attainment/unclass

SUMMARY OF FACTOR 2: AIR QUALITY Huntington-Ashland, WV-KY-OH MSA

EPA Reg	ST	COUNTY	Design Values						Estimated Air Quality based on '00-02 DV	
			'01-'03		'00-'02		'99-'01		Maximum Estimate (inc. real)	# Estimated violating point/ #total pts
4	**KY**	**Boyd**	**15.0**	**A**	**15.7**	**NA**	**15.5**	**NA**	**15.7**	**3/4**
3	**WV**	**Cabell**	**16.6**	**NA**	**17.3**	**NA**	**17.8**	**NA**	**17.3**	**6/6**
4	**KY**	**Carter**	**12.2**	**A**	**13.1**	**A**	**12.9**	**A**	**14.8**	**0/6**
4	**KY**	**Greenup**	**No Monitor**						**17.1**	**5/5**
5	**OH**	**Lawrence**	**15.8**	**NA**	**16.7**	**NA**	**17.4**	**na**	**17.0**	**8/8**
3	**WV**	**Wayne**	**No Monitor**						**16.2**	**7/7**
5	*OH*	*Scioto*	*17.2*	*NA*	*17.5*	*NA*	*20.0*	*NA*	*17.5*	*11/11*

Region III in agreement with West Virginia Recommendation for Huntington MSA

Marion Area (Fairmont CSA)

Discussion

The Marion area is a county which is not part of a 1999 Metropolitan Statistical area. In 2003, however, the Office of Management and Budget (OMB) delineated new boundaries using the 2000 Census Data. Marion was included in the Fairmont CBSA in 2003. Harrison and Preston Counties, part of the 2003 Clarksburg CBSA are included with Marion in the larger 2003 Combined Statistical Area (CSA). Marion County has monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 µg/m³. Based on the monitored violations, the Fairmont CSA is considered a presumptive nonattainment area. Marion County has monitored 15.4 µg/m³ for the time period 2001-2003. This monitor is intended to be used as the Design Value monitor for the Marion nonattainment area.

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended the single county as a nonattainment area EPA has reviewed the State's recommendations as well as additional data provided by West Virginia on June 3, 2004. EPA agrees with the recommendation for Marion County, however, EPA intends to add two adjacent counties, Harrison and Monongalia, to the nonattainment area.

Summary of Evaluation

Based on weighted emissions screening, EPA has identified Wetzel County and Taylor County to have relatively low emissions contribution to the metropolitan area. Review of the remaining factors, provides additional evidence for the designation of attainment for these surrounding counties.

Harrison, Preston and Monongalia counties, however, show higher contribution to the area, based on the weighted emissions factor. Population density and commuting patterns are relatively small in this rural area. Although both Harrison and Monongalia have monitored attainment, estimates show potential exceedances of the standard in other parts of Monongalia County. The actual emissions from Harrison and Monongalia counties, are estimated to substantially contribute to the monitored violations in Marion County when reviewed with topography and meteorology. EPA intends to modify the West Virginia recommended nonattainment boundary and include Harrison and Monongalia counties with the Marion MSA. A summary of the data which supports the modification of the State's recommendation is provided below.

SUMMARY OF MARION, WV AREA

EPA Reg	ST	COUNTY	State Recommend $PM_{2.5}$ Designation	EPA Intent $PM_{2.5}$ Designation	Area - '99 C/MSA N/A 2003 CBSA Area Listed
		C/MSA Total (excluding surrounding) = 1 counties			
3	**WV**	**Marion**	**Nonattainment**	**Nonattainment**	**Fairmont-Clarksburg, WV**
3	WV	Monongalia	Attainment	Nonattainment	
3	WV	Harrison	Attainment	Nonattainment	**Fairmont-Clarksburg, WV**
3	WV	Preston	Attainment	Attainment/unclass	
3	WV	Wetzel	Attainment	Attainment/unclass	
3	WV	Lewis	Attainment	Attainment/unclass	
3	WV	Upshur	Attainment	Attainment/unclass	
3	WV	Tyler	Attainment	Attainment/unclass	
3	WV	Barbour	Attainment	Attainment/unclass	
3	WV	Taylor	Attainment	Attainment/unclass	**Fairmont-Clarksburg, WV**
3	WV	Ritchie	Attainment	Attainment/unclass	
3	WV	Gilmer	Attainment	Attainment/unclass	
3	WV	Doddridge	Attainment	Attainment/unclass	**Fairmont-Clarksburg, WV**

SUMMARY OF FACTOR 1: EMISSIONS MARION, WV AREA

**** Counties Listed by Percent Contribution to area****

EPA Reg	ST	COUNTY	Total Emissions, 2001 (tons)							Weighted Emisssions
			PM	SO2	NOX	VOC	Amm	Carbon	Crustal	
3	WV	Monongalia	5,459	81,413	17,545	5,606	185	1,320	3,331	574.2
3	WV	Harrison	2,781	7,671	35,477	4,641	240	657	1,748	282.1
3	WV	Preston	1,715	21,864	6,528	1,874	271	465	1,021	179.6
3	**WV**	**Marion**	**777**	**7,953**	**6,069**	**3,075**	**102**	**295**	**413**	**100.0**
3	WV	Wetzel	260	698	4,323	1,720	45	160	79	45.1
3	WV	Lewis	244	372	4,095	1,795	123	143	87	40.5
3	WV	Upshur	342	141	1,583	1,676	90	178	150	35.7
3	WV	Tyler	292	176	1,233	1,869	44	122	126	25.5
3	WV	Barbour	294	84	800	740	200	131	145	25.0
3	WV	Taylor	253	416	2,595	721	67	73	128	24.1
3	WV	Ritchie	166	118	713	636	75	97	63	18.9
3	WV	Gilmer	122	24	1,088	640	47	73	44	16.1
3	WV	Doddridge	123	30	798	434	39	73	46	15.0

SUMMARY OF FACTOR 2: AIR QUALITY MARION, WV AREA

Sorted by Monitored Air Quality Then Estimated Air Quality Highest to Lowest

EPA Reg	ST	COUNTY	Design Values						Estimated Air Quality	
			'01-'03		'00-'02		'99-'01		Maximum Estimate (inc. real)	# Estimated violating point/ #total pts
3	**WV**	**Marion**	**15.4**	**NA**	**15.7**	**NA**	**15.9**	**na**	**15.7**	**5/6**
3	WV	Monongalia	14.9	A	15.0	A	15.0	A	15.6	2/5
3	WV	Harrison	14.0	A	14.5	A	14.8	A	15.0	0/9
3	WV	Ritchie	No Monitor						16.0	7/7
3	WV	Tyler	No Monitor						15.5	4/4
3	WV	Wetzel	No Monitor						15.5	3/3
3	WV	Doddridge	No Monitor						15.3	3/4
3	WV	Gilmer	No Monitor						15.0	0/4
3	WV	Preston	No Monitor						14.5	0/8
3	WV	Lewis	No Monitor						14.4	0/5
3	WV	Taylor	No Monitor						14.2	0/2
3	WV	Upshur	No Monitor						13.7	0/3
3	WV	Barbour	No Monitor						13.6	0/5

SUMMARY OF FACTOR 3A: POPULATION

Sorted by Population Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	WV	Monongalia	82,895	361	230
3	WV	Harrison	67,856	416	163
3	**WV**	**Marion**	**56,433**	**310**	**182**
3	WV	Preston	29,460	648	45
3	WV	Upshur	23,318	355	66
3	WV	Wetzel	17,363	359	48
3	WV	Lewis	16,690	389	43
3	WV	Taylor	16,059	173	93
3	WV	Barbour	15,507	341	45
3	WV	Ritchie	10,278	454	23
3	WV	Tyler	9,399	258	36
3	WV	Doddridge	7,425	321	23
3	WV	Gilmer	6,986	340	21

SUMMARY OF FACTOR 3B: POPULATION DENSITY AND DEGREE OF URBANIZATION

Sorted by Density Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	WV	Monongalia	82,895	361	230
3	**WV**	**Marion**	**56,433**	**310**	**182**
3	WV	Harrison	67,856	416	163
3	WV	Taylor	16,059	173	93
3	WV	Upshur	23,318	355	66
3	WV	Wetzel	17,363	359	48
3	WV	Preston	29,460	648	45
3	WV	Barbour	15,507	341	45
3	WV	Lewis	16,690	389	43
3	WV	Tyler	9,399	258	36
3	WV	Ritchie	10,278	454	23
3	WV	Doddridge	7,425	321	23
3	WV	Gilmer	6,986	340	21

SUMMARY FACTOR 4A: COMMUTING PATTERNS; VMT SORTED HIGHEST TO LOWEST

EPA Reg	ST	COUNTY	VMT	Commuting to Other	
			2002	Percent	Number
3	WV	Monongalia	810	3	1,234
3	WV	Harrison	707	6	1,651
3	**WV**	**Marion**	**475**		
3	WV	Lewis	334	2	105
3	WV	Preston	294	2	184
3	WV	Upshur	172	1	59
3	WV	Barbour	135	2	117
3	WV	Ritchie	127	0	10
3	WV	Wetzel	111	2	107
3	WV	Taylor	102	12	736
3	WV	Doddridge	83	1	20
3	WV	Tyler	69	0	8
3	WV	Gilmer	62	0	1

SUMMARY FACTOR 4B: COMMUTING PATTERNS; % COMMUTERS SORTED HIGHEST TO LOWEST

EPA Reg	ST	COUNTY	VMT	Commuting to Other	
			2002	Percent	Number
3	**WV**	**Marion**	**475**		
3	WV	Taylor	102	12	736
3	WV	Harrison	707	6	1,651
3	WV	Monongalia	810	3	1,234
3	WV	Lewis	334	2	105
3	WV	Preston	294	2	184
3	WV	Barbour	135	2	117
3	WV	Wetzel	111	2	107
3	WV	Upshur	172	1	59
3	WV	Doddridge	83	1	20
3	WV	Ritchie	127	0	10
3	WV	Tyler	69	0	8
3	WV	Gilmer	62	0	1

SUMMARY FACTOR 5: EXPECTED GROWTH; Sorted by % Change 90-00							
			Population			VMT	
EPA Reg	ST	COUNTY	2002	Growth '90-'00	Pct chng '90-'00	Growth '02-'10	Pct chng '02-'10
3	WV	Monongalia	82,895	6,357	8	302	59
3	WV	Taylor	16,059	945	6	32	46
3	WV	Doddridge	7,425	409	6	36	77
3	WV	Upshur	23,318	537	2	18	12
3	WV	Preston	29,460	297	1	7	2
3	WV	Ritchie	10,278	110	1	58	84
3	**WV**	**Marion**	**56,433**	**-651**	**-1**	**99**	**26**
3	WV	Harrison	67,856	-719	-1	175	33
3	WV	Barbour	15,507	-142	-1	29	27
3	WV	Lewis	16,690	-304	-2	197	144
3	WV	Tyler	9,399	-204	-2	9	15
3	WV	Gilmer	6,986	-509	-7	-7	-10
3	WV	Wetzel	17,363	-1,565	-8	4	4

Factors 6 and 7 Meteorology and Geography/Topography											
EPA Reg	ST	COUNTY	Weighted Emissions	Weighted Emissions Considering Wind	LCC x	LCC y	Delta X	Delta Y	Dist	Quad	FREQ
	Charleston, WV				820.128	-5.457					
3	WV	Barbour	25.0	24.9	834.417	-41.474	14.290	-36.017	38.7	SE	19
3	WV	Doddridge	15.0	15.0	774.982	-35.026	-45.146	-29.569	54.0	SW	32
3	WV	Gilmer	16.1	16.1	769.111	-71.137	-51.017	-65.680	83.2	SW	33
3	WV	Harrison	282.1	281.5	803.216	-28.405	-16.912	-22.948	28.5	SW	31
3	WV	Lewis	40.5	40.4	795.818	-59.285	-24.310	-53.828	59.1	SW	32
3	**WV**	**Marion**	100.0	100.0	810.138	-3.031	-9.990	2.426	10.3	NW	38
3	WV	Monongalia	574.2	575.8	825.487	13.040	5.359	18.497	19.3	NE	13
3	WV	Preston	179.6	180.0	859.131	-3.400	39.004	2.057	39.1	NE	14
3	WV	Ritchie	18.9	18.8	747.248	-46.370	-72.879	-40.912	83.6	SW	36
3	WV	Taylor	24.1	24.0	830.619	-19.581	10.492	-14.124	17.6	SE	19
3	WV	Tyler	25.5	25.4	760.603	-15.441	-59.525	-9.983	60.4	SW	31
3	WV	Upshur	35.7	35.6	819.862	-69.472	-0.266	-64.015	64.0	SW	31
3	WV	Wetzel	45.1	45.0	777.845	3.447	-42.283	8.904	43.2	NW	38

Factor 8: Jurisdictional Boundaries The 1999 MSA was expanded in 2003 to include Harrison, Taylor and Doddridgecounties. The review of Taylor and Doddridgecounties, however, did not provide sufficient evidence to include these counties in the nonattainment area.

Factor 9: Level of Control EPA identified large sources greater than 1000 tons per year for any pollutant and evaluated its distance to a violating monitor for fine particulate. There are large uncontrolled sources in Monongalia and Harrison counties.

Parkersburg Area

Discussion

The Parkersburg Metropolitan Statistical Area (MSA) is comprised of two counties: Wood County, WV and Washington County, OH. Wood County, part of the MSA has monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 µg/m³. Based on the monitored violations, the Parkersburg MSA is considered a presumptive nonattainment area. Wood County has monitored 16.0 µg/m³ for the time period 2001-2003. This monitor is intended to be used as the Design Value monitor for the Parkersburg nonattainment area. Review of the Ohio counties has been done by EPA Region 5 and is specified in documentation generated by that Region. The EPA intended designation for Ohio counties is provided in the table below.

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended Wood County to be included in the Parkersburg nonattainment area. EPA has reviewed the State's recommendations as well as additional data provided by West Virginia on June 3, 2004 and agrees with the recommendation for Wood County, however, EPA intends to add an adjacent county, Pleasants County, WV, to the nonattainment area.

Summary of Evaluation

Based on weighted emissions screening, EPA has identified Tyler, Ritchie, and Roane and Calhoun counties in West Virginia to have relatively low emissions contribution to the metropolitan area. Review of the remaining factors provided additional evidence for the designation of attainment for these surrounding counties.

Pleasants and Wirt counties were added to the Parkersburg metropolitan area in the revised 2003 OMB metropolitan definition. Closer examination highlights the emissions contribution by Pleasants County to the area. Wirt County, in contrast, has low estimated emissions contribution to the area.

Wood County, part of the MSA, and Pleasants County, an adjacent county, show comparable emissions and similar air quality estimates. The population density and commuting patterns of Pleasants when compared to the core MSA counties in this area are not, however, substantial. The geography, however, does provide supporting information for designation of nonattainment as a contributing county. A small portion of Pleasants County juts into the metropolitan area. This portion of the county contains a major emitting source. EPA intends, based on this review, to modify the West Virginia recommended nonattainment boundary and include Pleasants County with the Parkersburg MSA. A summary of the data which supports the addition of Pleasants County to the State's recommendation is provided below.

Parkersburg WV-OH MSA

EPA Reg	ST	COUNTY	State Recommend $PM_{2.5}$ Designation	EPA Intent $PM_{2.5}$ Designation	Area - '99 C/MSA
5	**OH**	**Washington**	**Attainment**	**Nonattainment**	**Parkersburg-Marietta, WV-OH**
3	**WV**	**Wood**	**Nonattainment**	**Nonattainment**	**Parkersburg-Marietta, WV-OH**
5	OH	Athens	Attainment	Attainment	
3	WV	Calhoun	Attainment	Attainment	
3	WV	Jackson	Attainment	Attainment	
5	OH	Meigs	Attainment	Attainment	
5	OH	Monroe	Attainment	Attainment	
5	OH	Morgan	Attainment	Attainment	
5	OH	Noble	Attainment	Attainment	
3	WV	Pleasants	Attainment	Nonattainment	*Parkersburg 2003 CBSA*
3	WV	Ritchie	Attainment	Attainment	
3	WV	Roane	Attainment	Attainment	
3	WV	Tyler	Attainment	Attainment	
3	WV	Wirt	Attainment	Attainment	*Parkersburg 2003 CBSA*

SUMMARY OF FACTOR 1: EMISSIONS PARKERSBURG WV-OH MSA

**** Counties Listed by Percent Contribution to area****

EPA Reg	ST	COUNTY	Total Emissions, 2001 (tons)							Weighted Emisssions Factor
			PM	SO2	NOX	VOC	Amm	Carbon	Crustal	
5	**OH**	**Washington**	**10,743**	**173,312**	**37,020**	**5,274**	**565**	**2,415**	**6,711**	**48.4**
3	WV	Pleasants	2,602	68,264	23,398	1,337	29	823	1,411	17.7
3	**WV**	**Wood**	**1,144**	**6,514**	**6,943**	**7,148**	**243**	**591**	**482**	**10.3**
3	WV	Jackson	1,780	3,464	3,947	2,394	158	451	1,128	7.7
5	OH	Athens	417	733	3,166	2,400	204	176	222	3.1
5	OH	Monroe	715	4,532	2,809	1,166	230	162	504	3.0
5	OH	Meigs	309	375	2,244	1,051	164	147	145	2.5
3	WV	Tyler	292	176	1,233	1,869	44	122	126	2.1
3	WV	Ritchie	166	118	713	636	75	97	63	1.6
5	OH	Morgan	217	81	558	921	228	88	122	1.5
5	OH	Noble	219	144	1,622	1,377	197	87	127	1.5
3	WV	Wirt	84	19	206	406	45	46	36	0.8
3	WV	Roane	213	106	1,083	1,108	99	119	87	2.0
3	WV	Calhoun	114	43	937	512	35	68	42	1.2

SUMMARY OF FACTOR 2: AIR QUALITY

Sorted by Monitored then Estimated Air Quality: Highest to Lowest

EPA Reg	ST	COUNTY	Design Values '01-'03		Estimated Air Quality based on '00-02 DV	
					Maximum Estimate (inc. real)	# Estimated violating point/ #total pts
3	**WV**	**Wood**	**16.0**	**NA**	**17.0**	**6/6**
5	OH	Athens	12.5	A	15.1	1/7
3	WV	Jackson			16.6	8/8
5	**OH**	**Washington**			**16.4**	**9/10**
3	WV	Wirt			16.1	3/3
5	OH	Meigs			16.0	6/6
3	WV	Pleasants			16.0	2/2
3	WV	Ritchie			16.0	7/7
3	WV	Roane			16.0	6/6
3	WV	Calhoun			15.7	3/4
5	OH	Monroe			15.5	7/9
3	WV	Tyler			15.5	4/4
5	OH	Noble			14.8	0/6
5	OH	Morgan			14.4	0/6

SUMMARY OF FACTOR 3A: POPULATION Sorted Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	**WV**	**Wood**	**87,306**	**367**	**238**
5	OH	Athens	63,256	507	125
5	**OH**	**Washington**	**62,561**	**635**	**99**
3	WV	Jackson	28,204	466	61
5	OH	Meigs	23,111	430	54
3	WV	Roane	15,267	484	32
5	OH	Monroe	14,973	456	33
5	OH	Morgan	14,749	418	35
5	OH	Noble	14,088	399	35
3	WV	Ritchie	10,278	454	23
3	WV	Tyler	9,399	258	36
3	WV	Pleasants	7,579	131	58
3	WV	Calhoun	7,451	281	27
3	WV	Wirt	5,935	233	25

SUMMARY OF FACTOR 3B: POPULATION DENSITY Sorted Highest to Lowest

SUMMARY OF FACTOR	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	**WV**	**Wood**	**87,306**	**367**	**238**
5	OH	Athens	63,256	507	125
5	**OH**	**Washington**	**62,561**	**635**	**99**
3	WV	Jackson	28,204	466	61
3	WV	Pleasants	7,579	131	58
5	OH	Meigs	23,111	430	54
3	WV	Tyler	9,399	258	36
5	OH	Morgan	14,749	418	35
5	OH	Noble	14,088	399	35
5	OH	Monroe	14,973	456	33
3	WV	Roane	15,267	484	32
3	WV	Calhoun	7,451	281	27
3	WV	Wirt	5,935	233	25
3	WV	Ritchie	10,278	454	23

SUMMARY FACTOR 4A: VMT Highest to Lowest					Sorted
EPA Reg	ST	COUNTY	VMT	Commuting to Other Metro Counties	
			2002	Percent	Number
3	**WV**	**Wood**	**911**	**9**	**3,316**
5	**OH**	**Washington**	**737**	**21**	**5,927**
3	WV	Jackson	511	6	666
5	OH	Athens	482	4	1,025
5	OH	Noble	362	10	480
5	OH	Meigs	200	7	633
3	WV	Roane	183	2	134
5	OH	Monroe	142	5	283
3	WV	Ritchie	127	23	914
5	OH	Morgan	116	9	552
3	WV	Pleasants	78	35	1,026
3	WV	Tyler	69	8	272
3	WV	Calhoun	60	3	81
3	WV	Wirt	44	54	1,215

SUMMARY FACTOR 4B: COMMUTING PATTERNS; % Commuters Sorted Highest to Lowest					
EPA Reg	ST	COUNTY	VMT	Commuting to Other	
			2002	Percent	Number
3	WV	Wirt	44	54	1,215
3	WV	Pleasants	78	35	1,026
3	WV	Ritchie	127	23	914
5	**OH**	**Washington**	**737**	**21**	**5,927**
5	OH	Noble	362	10	480
5	OH	Morgan	116	9	552
3	**WV**	**Wood**	**911**	**9**	**3,316**
3	WV	Tyler	69	8	272
5	OH	Meigs	200	7	633
3	WV	Jackson	511	6	666
5	OH	Monroe	142	5	283
5	OH	Athens	482	4	1,025
3	WV	Calhoun	60	3	81
3	WV	Roane	183	2	134

SUMMARY FACTOR 5: EXPECTED GROWTH; Growth '90-'00								Sorted by %
EPA Reg	ST	COUNTY	Population			VMT		
			2002	Growth '90-'00	Pct chng '90-'00	Growth96-'02-	Pct chng '96-'02-	
5	**OH**	**Washington**	**62,561**	**635**	**99**	**134**	**22**	
5	OH	Athens	63,256	507	125	120	33	
3	WV	Roane	15,267	484	32	46	34	
3	WV	Jackson	28,204	466	61	302	144	
5	OH	Monroe	14,973	456	33	2	1	
3	WV	Ritchie	10,278	454	23	58	84	
5	OH	Meigs	23,111	430	54	10	5	
5	OH	Morgan	14,749	418	35	-8	-6	
5	OH	Noble	14,088	399	35	229	172	
3	**WV**	**Wood**	**87,306**	**367**	**238**	**88**	**11**	
3	WV	Calhoun	7,451	281	27	10	20	
3	WV	Tyler	9,399	258	36	9	15	
3	WV	Wirt	5,935	233	25	20	83	
3	WV	Pleasants	7,579	131	58	27	53	

Factors 6 and 7 Meteorology and Geography/Topography											
EPA Reg	ST	COUNTY	Weighted Emissions Factor	Weighted Emissions Considering Wind and	LCC x	LCC y	Delta X	Delta Y	Dist	Quad	FREQ
					704.592	-35.809					
5	**OH**	**Washington**	82.2	82.2	712.226	-23.347	7.634	12.462	14.6	NE	21
3	WV	Pleasants	30.1	30.0	733.400	-26.125	28.808	9.684	30.4	NE	18
3	**WV**	**Wood**	17.8	17.8	709.578	-49.397	4.986	-13.588	14.5	SE	18
3	WV	Jackson	13.3	13.3	699.948	-88.532	-4.644	-52.722	52.9	SW	39
5	OH	Athens	5.4	5.4	666.031	-34.945	-38.561	0.864	38.6	NW	23
5	OH	Monroe	5.2	5.2	740.033	9.424	35.441	45.233	57.5	NE	16
5	OH	Meigs	4.4	4.4	667.581	-70.480	-37.011	-34.671	50.7	SW	39
3	WV	Tyler	3.6	3.6	760.603	-15.441	56.011	20.369	59.6	NE	12
3	WV	Roane	3.5	3.5	728.164	-99.151	23.572	-63.342	67.6	SE	19
3	WV	Ritchie	2.8	2.8	747.248	-46.370	42.656	-10.560	43.9	SE	18
5	OH	Noble	2.7	2.7	706.650	12.701	2.058	48.511	48.6	NE	19
5	OH	Morgan	2.5	2.5	678.063	-7.477	-26.529	28.332	38.8	NW	23
3	WV	Calhoun	2.0	2.0	746.693	-84.033	42.101	-48.223	64.0	SE	17
3	WV	Wirt	1.3	1.3	722.917	-65.392	18.325	-29.583	34.8	SE	18

Factor 8: Jurisdictional Boundaries The 1999 MSA was expanded in 2003 to include Pleasants and Wirt counties. The review of Wirt County, however, did not provide sufficient evidence to include these counties in the nonattainment area.

The Parkersburg area has recently been designated nonattainment for the 8-hour ozone standard. Wood County, WV and Washington County, OH both monitored violations fo the ozone standard.

Factor 9: Level of Control

EPA identified large sources greater than 1000 tons per year for any pollutant and evaluated its distance to a violating monitor for fine particulate. This screening identified the Pleasants Power Plant 13 miles from the violating monitor. West Virginia has provided additional information on the level of control of the Pleasants plant. Additional NOX controls have recently been added to the power plant. The 1200 MW plant is now well controlled. There is a 15% scrubber bypass currently operating on the plant, however. The much smaller Willow Island power plant (228 MW) is located in Pleasants County and is not well controlled.

Steubenville OH-WV Area

Discussion

The Steubenville-Weirton MSA includes three counties. Two counties in West Virginia, Brooke and Hancock, as well as Jefferson County, OH. The surrounding counties have been evaluated and designated as part of the Pittsburgh and Wheeling nonattainment areas. Hancock and Brooke counties both monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 µg/m³. Based on the monitored violations, the Steubenville MSA is considered a presumptive nonattainment area. Jefferson County, OH has monitored 17.8 µg/m³ for the time period 2001-2003. This monitor is intended to be used as the Design Value monitor for the Steubenville nonattainment area.

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended Hancock and Brooke counties as part of the Steubenville nonattainment area. EPA has reviewed the State's recommendations as well as additional data provided by West Virginia on June 3, 2004. EPA agrees with the recommendation.

Summary of Evaluation

Both counties recommended by the State have monitored violations of the standard. Adjacent counties are for the most part have been analyzed under other metropolitan areas. Data supporting EPA's intended nonattainment boundaries and West Virginia's recommendation is provided below.

STATUS OF STEUBENVILLE MSA AND SURROUNDING AREA

EPA Reg	ST	COUNTY	State Recommend PM2.5 Designation	EPA Intent PM2.5 Designation	Area - '99 C/MSA
C/MSA Total (excluding surrounding) = 3 counties					
3	**WV**	**Brooke**	**Nonattainment**	**Nonattainment**	**Steubenville-Weirton, OH-WV**
3	**WV**	**Hancock**	**Nonattainment**	**Nonattainment**	**Steubenville-Weirton, OH-WV**
5	**OH**	**Jefferson**	**Nonattainment**	**Nonattainment**	**Steubenville-Weirton, OH-WV**
3	PA	Beaver	Nonattainment	Nonattainment	Pittsburgh, PA
5	OH	Belmont	Attainment	Nonattainment	Wheeling, WV-OH
5	OH	Columbiana	Attainment	Attainment	Youngstown-Warren, OH
3	WV	Ohio	Nonattainment	Nonattainment	Wheeling, WV-OH
3	PA	Washington	Nonattainment	Nonattainment	Pittsburgh, PA
5	OH	Carroll	Attainment	Attainment	Canton-Massillon, OH
5	OH	Harrison	Attainment	Attainment	

SUMMARY OF FACTOR 1: EMISSIONS STEUBENVILLE MSA

**** Counties Listed by Percent Contribution to area****

EPA Reg	ST	COUNTY	Total Emissions, 2001 (tons)							Weighted Emisssions Factor
			PM	SO2	NOX	VOC	Amm	Carbon	Crustal	
5	**OH**	**Jefferson**	**12,247**	**217,794**	**61,402**	**4,082**	**287**	**2,723**	**7,529**	**39.9**
3	PA	Beaver	4,948	40,380	39,564	8,738	543	1,368	2,900	18.8
3	PA	Washington	3,011	8,221	22,097	9,392	813	1,190	1,505	12.5
5	OH	Belmont	2,797	51,374	13,036	4,211	464	734	1,667	9.6
3	**WV**	**Hancock**	**4,335**	**1,982**	**4,961**	**3,585**	**571**	**1,243**	**1,747**	**9.4**
5	OH	Columbiana	1,187	1,291	5,825	5,881	1,250	442	696	4.2
3	WV	Ohio	351	514	3,609	2,779	123	192	135	1.9
3	**WV**	**Brooke**	**527**	**1,663**	**2,500**	**4,358**	**439**	**191**	**277**	**1.8**
5	OH	Carroll	363	386	1,886	1,422	375	120	234	1.2
5	OH	Harrison	191	258	712	786	254	70	116	0.6

SUMMARY OF FACTOR 2: AIR QUALITY STEUBENVILLE MSA

EPA Reg	ST	COUNTY	Design Values					
			'01-'03		'00-'02		'99-'01	
3	**WV**	**Brooke**	**16.8**	**NA**	**16.8**	**NA**	**17.4**	**NA**
3	**WV**	**Hancock**	**17.4**	**NA**	**17.5**	**NA**	**17.4**	**NA**
5	**OH**	**Jefferson**	**17.8**	**NA**	**18.2**	**NA**	**18.9**	**NA**

The two Region 3 counties to be evaluated as part of the Steubenville MSA have monitored violations of the PM2.5 Standard. Evaluation of the remaining factors is not necessary.

Hagerstown-Martinsville Area

Discussion

Berkeley County, WV has monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 µg/m³. Based on the monitored violations, this county is considered a presumptive nonattainment area. Berkeley County has monitored 16.3 µg/m³ for the time period 2001-2003. This monitor is intended to be used as the Design Value monitor for the Hagerstown nonattainment area.

Berkeley County is actually part of the large Washington-Baltimore CMSA. For planning purposes and consistency with existing ozone boundaries, EPA intends to separate Berkeley from the CMSA. The existing ozone nonattainment boundary includes Berkeley and Jefferson counties as an independent area, referred to as the Eastern WV panhandle. Berkeley County was defined by OMB in 2003 as part of the Hagerstown-Martinsville CBSA with Washington County, MD.

West Virginia recommended both Jefferson and Berkeley counties as nonattainment in the February 13, 2004 recommendation letter. On June 1, 2004, the state revised its recommendation to exclude Jefferson County. Washington County, MD has also been recommended attainment by the state of Maryland. Berkeley County has monitored violations, EPA agrees with the West Virginia recommendation of nonattainment for Berkeley County; however, EPA intends to designate Berkeley County with the Hagerstown-Martinsville CBSA following EPA April 1, 2003 guidance suggesting that single counties be included with the nearest metropolitan area.

Wheeling, WV-OH Area

Discussion

The Wheeling Metropolitan Statistical Area (MSA) is comprised of three counties including two counties in West Virginia. The table below lists the counties in the MSA. Two counties in this MSA, Marshall and Ohio counties in West Virginia have monitored violations of the fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) of 15.0 $\mu g/m^3$. Based on the monitored violations, the Wheeling MSA is considered a presumptive nonattainment area. Marshall County, WV is part of the MSA and monitored 15.7 $\mu g/m^3$ for the time period 2001-2003. This value is being considered the Design Value for the nonattainment area.

The State of West Virginia, in the Secretary Timmermeyer correspondence of February 13, 2004, recommended the two MSA counties to be included in the Wheeling nonattainment area. EPA has reviewed the State's recommendations as well as additional data provided by West Virginia on June 3, EPA agrees with the State recommendation to include Marshall and Ohio Counties in the Wheeling nonattainment area. Belmont, Ohio has been reviewed and designated nonattainment by EPA Region 5.

SUMMARY OF FACTOR 1: EMISSIONS MARION, WV AREA

**** Counties Listed by Percent Contribution to area****

EPA Reg	ST	COUNTY	Total Emissions, 2001 (tons)							Weighted Emisssions
			PM	SO2	NOX	VOC	Amm	Carbon	Crustal	
5	OH	Jefferson	12,247	217,794	61,402	4,082	287	2,723	7,529	119.6
3	PA	Greene	11,626	186,481	31,832	2,756	256	2,548	7,223	99.2
3	**WV**	**Marshall**	**5,596**	**113,921**	**44,521**	**4,125**	**122**	**1,319**	**3,417**	**65.0**
3	PA	Washington	3,011	8,221	22,097	9,392	813	1,190	1,505	35.4
5	**OH**	**Belmont**	**2,797**	**51,374**	**13,036**	**4,211**	**464**	**734**	**1,667**	**29.5**
5	OH	Guernsey	503	1,164	5,643	3,602	367	229	261	7.3
5	OH	Monroe	715	4,532	2,809	1,166	230	162	504	5.5
3	**WV**	**Ohio**	**351**	**514**	**3,609**	**2,779**	**123**	**192**	**135**	**5.5**
3	WV	Brooke	527	1,663	2,500	4,358	439	191	277	5.3
3	WV	Wetzel	260	698	4,323	1,720	45	160	79	5.2
5	OH	Noble	219	144	1,622	1,377	197	87	127	2.5
5	OH	Harrison	191	258	712	786	254	70	116	1.8

SUMMARY OF FACTOR 2: AIR QUALITY MARION, WV AREA

Sorted by Monitored Air Quality Then Estimated Air Quality Highest to Lowest

EPA Reg	ST	COUNTY	Design Values						Estimated Air Quality	
			'01-'03		'00-'02		'99-'01		Maximum Estimate (inc. real)	# Estimated violating point/ #total pts
	OH	Jefferson	17.8	NA	18.2	NA	18.9	NA	18.2	7/7
	WV	Brooke	16.8	NA	16.8	NA	17.4	NA	16.8	3/3
	WV	**Marshall**	**15.7**	**NA**	**16.0**	**NA**	**16.5**	**NA**	**16.0**	**7/7**
	PA	Washington	15.5	NA	15.7	NA	15.5	NA	15.9	11/14
	WV	**Ohio**	**15.2**	**NA**	**15.3**	**NA**	**15.7**	**NA**	**16.1**	**3/3**
	OH	Harrison	No Monitor						16.7	9/9
	OH	**Belmont**	No Monitor						**15.6**	**5/5**
	PA	Greene	No Monitor						15.6	9/9
	OH	Monroe	No Monitor						15.5	7/9
	WV	Wetzel	No Monitor						15.5	3/3
	OH	Guernsey	No Monitor						15.2	2/7
	OH	Noble	No Monitor						14.8	0/6

SUMMARY OF FACTOR 3A: POPULATION

Sorted by Population Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	PA	Washington	204,110	857	238
5	OH	Jefferson	72,402	410	177
5	**OH**	**Belmont**	**69,448**	**537**	**129**
3	**WV**	**Ohio**	**46,126**	**106**	**435**
5	OH	Guernsey	40,987	522	79
3	PA	Greene	40,520	576	70
3	**WV**	**Marshall**	**34,898**	**307**	**114**
3	WV	Brooke	25,179	89	283
3	WV	Wetzel	17,363	359	48
5	OH	Harrison	15,890	404	39
5	OH	Monroe	14,973	456	33
5	OH	Noble	14,088	399	35

SUMMARY OF FACTOR 3B: POPULATION DENSITY AND DEGREE OF URBANIZATION

Sorted by Population Highest to Lowest

EPA Reg	ST	COUNTY	Population & Area		
			2002	Area (sq miles)	Density '02
3	**WV**	**Ohio**	**46,126**	**106**	**435**
3	WV	Brooke	25,179	89	283
3	PA	Washington	204,110	857	238
5	OH	Jefferson	72,402	410	177
5	**OH**	**Belmont**	**69,448**	**537**	**129**
3	**WV**	**Marshall**	**34,898**	**307**	**114**
5	OH	Guernsey	40,987	522	79
3	PA	Greene	40,520	576	70
3	WV	Wetzel	17,363	359	48

SUMMARY FACTOR 4A: COMMUTING PATTERNS; VMT SORTED HIGHEST TO LOWEST					
EPA Reg	ST	COUNTY	VMT	Commuting to Other	
			2002	Percent	Number
3	PA	Washington	2,057	0	386
5	**OH**	**Belmont**	**1,066**	**20**	**5,667**
5	OH	Guernsey	1,026	2	365
5	OH	Jefferson	741	7	2,045
3	PA	Greene	560	1	101
3	**WV**	**Ohio**	**437**	**15**	**2,964**
5	OH	Noble	362	2	103
3	WV	Brooke	313	9	962
3	**WV**	**Marshall**	**233**	**37**	**5,233**
5	OH	Harrison	143	7	473
5	OH	Monroe	142	15	852
3	WV	Wetzel	111	8	519

SUMMARY FACTOR 4B: COMMUTING PATTERNS; % COMMUTERS SORTED HIGHEST TO LOWEST					
EPA Reg	ST	COUNTY	VMT	Commuting to Other	
			2002	Percent	Number
5	**OH**	**Belmont**	**1,066**	**20**	**5,667**
3	**WV**	**Marshall**	**233**	**37**	**5,233**
3	**WV**	**Ohio**	**437**	**15**	**2,964**
5	OH	Jefferson	741	7	2,045
3	WV	Brooke	313	9	962
5	OH	Monroe	142	15	852
3	WV	Wetzel	111	8	519
5	OH	Harrison	143	7	473
3	PA	Washington	2,057	0	386
5	OH	Guernsey	1,026	2	365
5	OH	Noble	362	2	103
3	PA	Greene	560	1	101

SUMMARY FACTOR 5: EXPECTED GROWTH; by % Change 90-00							Sorted
EPA Reg	ST	COUNTY	Population			VMT	
			2002	Growth '90-'00	Pct chng '90-'00	Growth '96-'02	Pct chng '96-'02
5	OH	Noble	14,088	2,722	24	229	172
5	OH	Guernsey	40,987	1,768	5	636	163
3	PA	Greene	40,520	1,122	3	161	40
5	OH	Harrison	15,890	-229	-1	3	2
5	OH	Monroe	14,973	-317	-2	2	1
5	**OH**	**Belmont**	**69,448**	**-848**	**-1**	**290**	**37**
3	WV	Brooke	25,179	-1,545	-6	94	43
3	WV	Wetzel	17,363	-1,565	-8	4	4
3	PA	Washington	204,110	-1,687	-1	168	9
3	**WV**	**Marshall**	**34,898**	**-1,837**	**-5**	**-57**	**-20**
3	**WV**	**Ohio**	**46,126**	**-3,444**	**-7**	**-83**	**-16**
5	OH	Jefferson	72,402	-6,404	-8	-48	-6

Factors 6 and 7 Meteorology and Geography/Topography

EPA Reg	ST	COUNTY	Weighted Emissions Factor	Weighted Emissions Considering Wind	LCC x	LCC y	Delta X	Delta Y	Dist	Quad	FREQ
					765.150	35.258					
5	**OH**	**Belmont**	**29.5**	**29.5**	744.601	43.256	-20.550	7.997	22.1	NW	26
3	WV	Brooke	**5.3**	**5.3**	772.232	55.601	7.082	20.342	21.5	NE	16
3	PA	Greene	**99.2**	**99.2**	806.167	33.795	41.017	-1.463	41.0	SE	19
5	OH	Guernsey	**7.3**	**7.2**	702.681	40.754	-62.470	5.495	62.7	NW	27
5	OH	Harrison	**1.8**	**1.8**	730.290	72.592	-34.861	37.334	51.1	NW	27
5	OH	Jefferson	**119.6**	**119.7**	756.082	84.249	-9.069	48.991	49.8	NW	28
3	**WV**	**Marshall**	**65.0**	**65.0**	772.625	30.062	7.474	-5.196	9.1	SE	19
5	OH	Monroe	**5.5**	**5.4**	740.033	9.424	-25.118	-25.835	36.0	SW	37
5	OH	Noble	**2.5**	**2.5**	706.650	12.701	-58.501	-22.557	62.7	SW	35
3	**WV**	**Ohio**	**5.5**	**5.5**	772.232	55.601	7.082	20.342	21.5	NE	16
3	PA	Washington	**35.4**	**35.3**	798.250	70.428	33.100	35.170	48.3	NE	16
3	WV	Wetzel	**5.2**	**5.1**	777.845	3.447	12.695	-31.811	34.3	SE	19

Wind Direction and Distance Weighting; *The weighted emissions ranking of counties considers the contribution of pollutants to the "urban excess" of the MSA on a speciated basis. The general form of the ranking considers each county in the same way, regardless of direction and distance from the violating monitor. To account for the effect of direction and distance in a simplistic way a modified emissions score was calculated as follows. For each county in and adjacent to the MSA the distance and general direction (expressed as a compass quadrant) of the county centroid to the MSA's design value monitor were determined. For each county a 10-year or longer average frequency of occurrence of the wind direction quadrant was derived. The county's weighted emissions score was modified by multiplying the score by the percentage of the wind direction from the county centroid to the design value monitor and divided by the distance in kilometers. For example, if the wind frequency was 25% and the distance was 50 kilometers, the emissions score would be modified by the fraction of 25 50, or 0.5. The cumulative percentages were then calculated by normalizing by the sum of the modified emissions scores.*

Enclosure C

An Explanation of EPA's 9-Factor Analysis

Factor 1. Emissions in areas potentially included versus excluded from the nonattainment area:

The analysis for factor 1 looks at emissions of carbonaceous particles ("carbon"), inorganic particles ("crustal"), SO_2, and NOx. EPA computed a composite emission score for each county by multiplying the county's emissions as a fraction of the metropolitan area emissions for each of these pollutants times a corresponding air quality weighting factor. The air quality weighting factors for each area are given below and reflect the percentages of the total estimated "urban excess" value found as, respectively, carbonaceous particles, miscellaneous inorganic particles ("crustal material"), ammonium sulfate, and ammonium nitrate. These scores add to 100 for the metropolitan area counties. Composite scores were also calculated for counties adjacent to the metropolitan area. Tables presented under factor 1 present the emissions of carbonaceous particles, inorganic particles, SO_2, and NOx and the composite emission scores for the counties in the corresponding metropolitan area and adjacent counties. Metropolitan area counties are in bold. Emissions data indicate the potential for a county to contribute to observed violations, often making the emissions data the most important factor in assessing boundaries of nonattainment areas.

"Urban excess" values are derived by comparing urban monitored component concentrations against rural monitored component concentrations. Concentrations of the four $PM_{2.5}$ components are obtained from local data if available (or, if necessary, from the nearest available urban site), and are compared to available rural concentrations. The monitoring sites used for this purpose are identified below. Although this information is air quality information, it is presented under Factor 1 due to its integration into the analysis of emissions information.

Factor 2. Air quality in potentially included versus excluded areas:

The air quality analysis looks at the annual average design value for each area based on data for 2001 to 2003. Counties without monitors are not listed.

Factor 3. Population density and degree of urbanization including commercial development in included versus excluded areas:

Tables presented under factor 3 show the 2003 population for each metropolitan area, as well as the population density for each county in that area. Population data indicate the likelihood of population-based emissions that might contribute to violations.

Factor 4. Traffic and commuting patterns:

The traffic and commuting analysis looks at the number of commuters in each county who drive to another county within the metropolitan area ("Number"), the percent of total commuters in

each county who commute to other counties within the metropolitan area ("percent")*, as well as the total Vehicle Miles Traveled (VMT) for each county in thousands of miles. A county with numerous commuters is generally an integral part of the area, and would be an appropriate part of the domain of some mobile source strategies, thus warranting inclusion in the nonattainment area.

*Note that the percent of commuters traveling to counties within the metropolitan area is based on the total number of commuters from that county. This total includes commuters who may travel outside the metropolitan area from their county of origin.

Factor 5. Expected growth:

The expected growth analysis looks at the percent growth for counties in each metropolitan area from 1990 to 2000.

Factor 6. Meteorology:

The meteorology analysis looks at wind data gathered over a ten year period by the National Weather Service. Tables presented under factor 6 list the annual average wind direction frequencies by quadrant for each county in the corresponding metropolitan area. These data show that annual average $PM_{2.5}$ concentrations are influenced by emissions in any direction at various times, but these data may also suggest that emissions in some directions relative to the violation may be more prone to contribute than emissions in other directions.

Factor 7. Geography/topography:

The geography/topography analysis looks at physical features of the land that might have an effect on the airshed, and therefore, the distribution of particulate matter over an area. nonattainment areas.

Factor 8. Jurisdictional boundaries:

The analysis of jurisdictional boundaries looks at the planning and organizational structure of an area to determine if the implementation of controls in a potential nonattainment area can be carried out in a cohesive manner.

Factor 9. Level of control of emission sources:

The level of control analysis looks at what controls are currently implemented in each area.