Julia.
cc: Jimmy
Stan

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

BETSY L. CHILD
COMMISSIONER

PHIL BREDESEN
GOVERNOR

December 9, 2003

U.S. EPA REGION 4
OFFICE OF
REGIONAL ADMINISTRATOR
2003 DEC 10 A 7 04

James L. Palmer, Jr.
Regional Administrator
United States Environmental Protection Agency, Region IV
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Re: Clean Air Act – Tennessee Eight-Hour Ozone Attainment Designations

Dear Mr. Palmer:

Tennessee is in receipt of your December 4, 2003 letter declaring EPA's intent to name certain counties in Tennessee as nonattainment with a deferred effective date because of our participation in the Early Action Compact process. EPA's letter can be interpreted in different ways. Therefore we are requesting clarification of EPA's rationale in naming these counties to guide us in our next steps during the 120-day consultative process.

EPA named several counties that Tennessee did not recommend as nonattainment per my previous letters of July 14, 2003 and November 19, 2003. Those counties are: Marion, Union, Fayette, Tipton, Cheatham, Dickson, Robertson, Carter and Unicoi Counties.

Therefore, I would like to request EPA's specific rationale in making its determination of nonattainment for the above listed counties. It would be most helpful to us if we received this information no later than December 31, 2003.

This information is needed in order to have a productive consultation because our response would differ depending on the basis for EPA's action. Of particular interest is whether or not the information Tennessee submitted for these counties was rejected by EPA because the Agency chose the simple presumptive boundary approach.

If EPA simply determined that counties were to be listed as nonattainment solely because of their participation in the Early Action Compact process, it would help us if you would share the legal basis EPA is relying upon to make that declaration.

Tennessee looks forward to working with EPA as we move toward our shared goal of clean air. Technical inquiries of your staff should be directed to our air pollution control director, Barry R. Stephens.

Sincerely,

Betsy L. Child
Commissioner

Copy to: Tennessee Air Pollution Control Board members
Local Air Pollution Control Programs

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Air Pollution Control Division
9th Floor, L & C Annex, 401 Church Street
Nashville, Tennessee 37243-1531

February 12, 2004

J.I. Palmer, Jr.
Regional Administrator
US EPA, Region IV
Atlanta Federal Center, 12th Floor
61 Forsyth Street, SW
Atlanta, GA 30303

RE: Tennessee's Response to EPA's Eight-Hour Ozone Nonattaiment Recommendations

Dear Mr. Palmer:

On December 4, 2003, EPA announced its intention to declare twenty-seven Tennessee counties as being nonattainment for the eight hour ozone NAAQS. The counties named in this letter did not match the list of counties that Tennessee recommended on July 14, 2003 with the supportive technical documentation provided on October 16, 2003 as amended on November 19, 2003.

Tennessee filed an initial response to the EPA December 3, 2003 letter on December 9, 2003. In that letter, we asked EPA to explain its rationale for including the additional counties that Tennessee did not name. Specifically, we asked if EPA was listing these counties simply because of their inclusion in an MSA with at least one nonattaining monitor or if they were included solely because of their participation in an Early Action Compact. We have not received a response to that letter. Absent EPA's response on this request, we would state that if it is EPA's intent to name a county as nonattainment simply because of its participation in an Early Action Compact, there is no legal basis for their inclusion. Tennessee took into account the factors of the March 28, 2000 boundary guidance factors in making its recommendations. It is not clear if EPA conducted a similar analysis for the counties in dispute.

Tennessee has prepared a comparative evaluation with the reasons why Tennessee feels that only the following amended list of counties should be declared to be nonattainment by EPA in the final area designations. Tennessee may submit additional documentation if needed or requested by EPA.

Area	EPA Recommended Nonattainment Counties (December 3, 2003)	Tennessee Final Amended Nonattainment Counties (February 12, 2004)	Tennessee Response to EPA's Recommended Counties
Chattanooga TN-GA	Hamilton, Marion and Meigs	**Hamilton and Portions of Meigs***	**Marion County** does not contribute a significant amount of ozone forming emissions to the area. The county is relatively rural; 79.3% and represents only 6% is the total MSA population. **Meigs County**, entirely rural in it's population distribution has little population to contribute to the MSA (about 2% to the entire MSA). Similarly, there are virtually no stationary NOX or VOC sources in the county. For this reason only the area southwest of the Hiwassee River in Meigs County should be designated nonattainment.
Clarksville-Hopkinsville TN-KY	Montgomery		**Montgomery County** emissions are identified by EPA as significant, there is evidence that transport from areas in northern Kentucky and further north are contributing to ozone levels monitored in Kentucky. Additionally, the federal military installation, Fort Campbell, is located in this area and is suspected of being the single largest contributor to mobile source emissions. It is unclear at this time, how mobile emissions from this installation could be mitigated and therefore managed in a manner that would bring about attainment without federal acknowledgement and intervention.
Johnson City-Kingsport-	Carter, Hawkins,	**Sullivan and Washington**	**Carter County** represents only 2% of the NOX point source emissions in

Bristol, TN	Sullivan, Unicoi and Washington		the area. Mobile source emissions for both NOX and VOC are also low in comparison to the other area counties. **Hawkins County** could be making a contribution to the ozone forming emissions; however, the electric generating facility in Hawkins County is subject to the NOX SIP call, and at minimum would be required to add low NOX burner controls thereby significantly reducing the impact to the area. Hawkins County also only represents 11% of the total MSA population with 61.4 % of the county being rural. **Unicoi County** is not making a significant contribution to the ozone forming emissions in the JC-K-B MSA area. Unicoi County represents less than one percent of the NOX point source emissions strength and about 3% of the mobile source NOX and VOC emissions.
Knoxville	Anderson, Blount, Knox, Loudon, Jefferson, Sevier and Union	**Anderson, Blount, Knox, Loudon, Sevier, Portions of Jefferson* and the GSMNP area***	**Union County,** almost entirely rural with population only 3% of the total for the Knoxville MSA, has the lowest emissions strength of all the counties in the MSA with 3% or less of the total. **Jefferson County** represents less than one percent of the NOX point source emissions and about 7% of the VOC emissions with mobile source emissions of 12 and 8% respectively. These emissions are primarily located along or near the Hwy 11 and I 40 corridors through the county. For these reasons a partial county area extending from I 40 northward to include all of Jefferson County beyond the interstate should be designated nonattainment. **GSMNP** area is located across several counties in Tennessee and North Carolina. There are no industrial point sources of emissions in the park proper with an unknown portion of each counties respective mobile source contributions for NOX and VOC. Ozone monitoring within

			the park at high elevation sites demonstrates a profound difference from those at lower elevations. The GSMNP is a federally controlled enclave within each of the two respective states. The area encompassed by the park boundaries in Tennessee and North Carolina should be designated with a separate nonattainment designation from the remaining nonattainment area in this MSA.
Memphis TN-AR-MS	Fayette, Shelby and Tipton	**Shelby**	**Fayette County** is entirely rural. Its population is only 3% of the MSA total. Point source emissions are less than one percent of NOX and 4% VOC for the area with 7 and 4% mobile source emissions respectively. **Tipton County** is a predominately rural county. Its population is only 5% of the MSA total. Point source emissions are 3 % for NOX and VOC with 5 % each for mobile source emissions respectively.
Nashville	Cheatham, Davidson, Dickson, Robertson, Rutherford, Sumner, Williamson and Wilson	**Davidson Rutherford, Sumner, Williamson and Wilson**	**Cheatham County** is 93.2% rural with only 3% of the total MSA population. Point source emissions are 0 % for NOX and 3 %VOC with 4 and 3 % each for mobile source emissions respectively. **Dickson County** is relatively 68.8% rural with only 3% of the total MSA population. Point source emissions are 1 % for NOX and 7 %VOC with 5 and 4 % each for mobile source emissions respectively. **Robertson County** is relatively 57.8% rural with only 4.5% of the total MSA population. Point source emissions are 1 % for NOX and 6 %VOC with 8 and 5 % each for mobile source emissions respectively.

*See attached suggested boundary for the partial county areas identified above.

Please see Enclosure 1; Jefferson County for the partial county boundary recommendation, Enclosure 2; Meigs County for the partial county boundary recommendation and Enclosure 3; GSMNP for the boundary designation recommendation.

If EPA prefers, the Commissioner of the Department can provide a signed copy of this letter.

Sincerely,

for TS Reddy

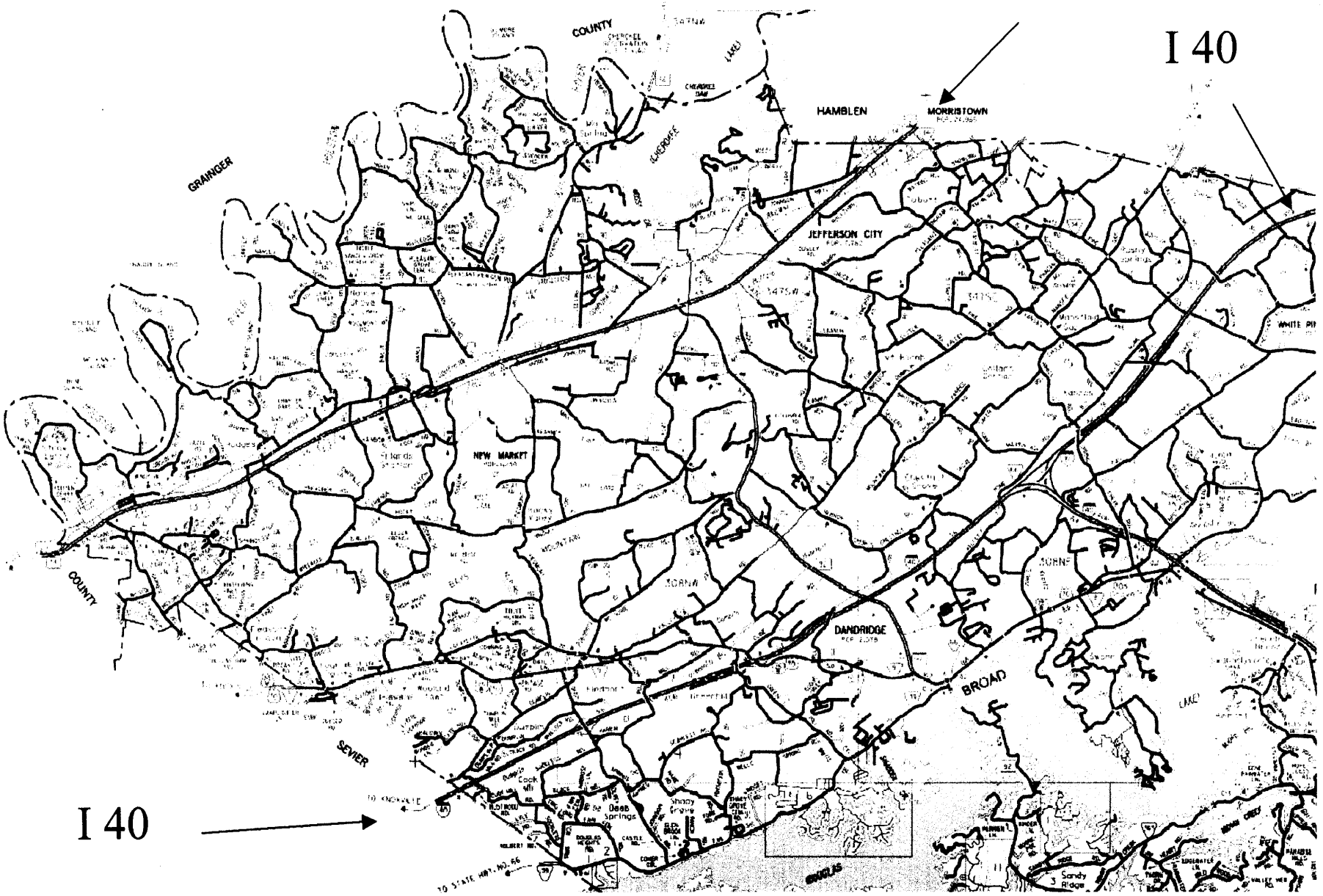
Barry R. Stephens, P.E.
Director

Enclosures

cc: Kay Prince

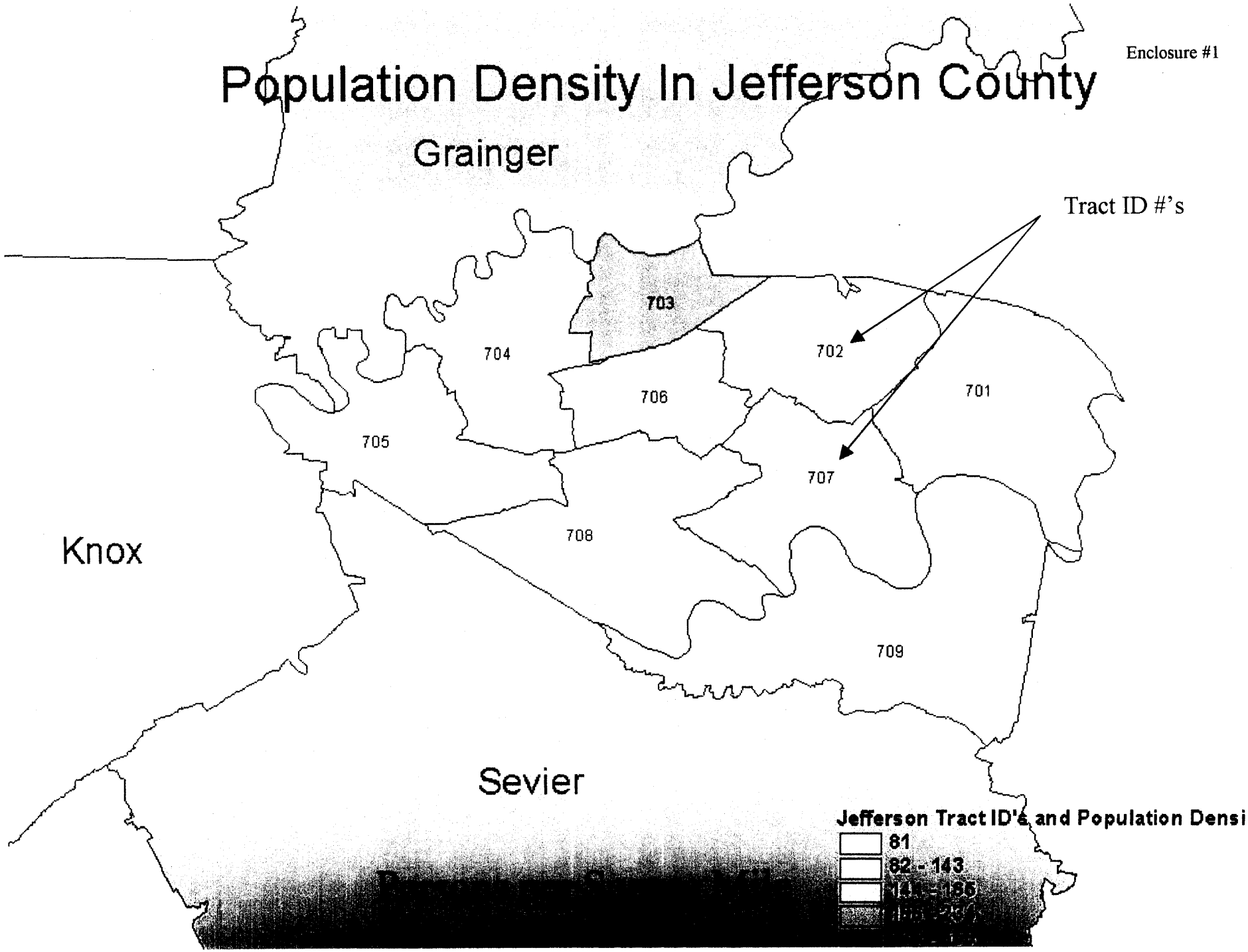
Partial Jefferson County Area Highway Boundary

Enclosure #1



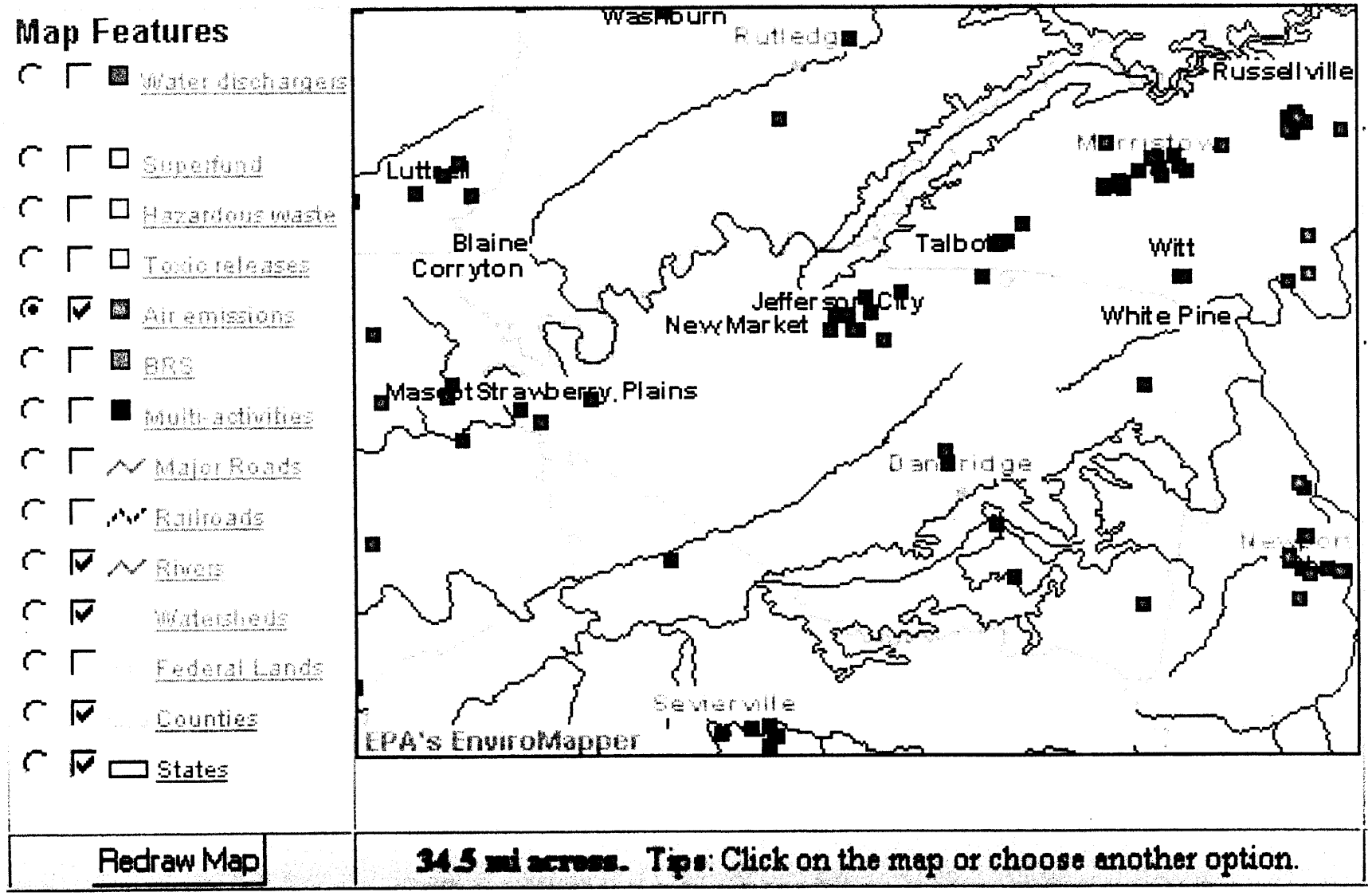
Enclosure #1

Population Density In Jefferson County



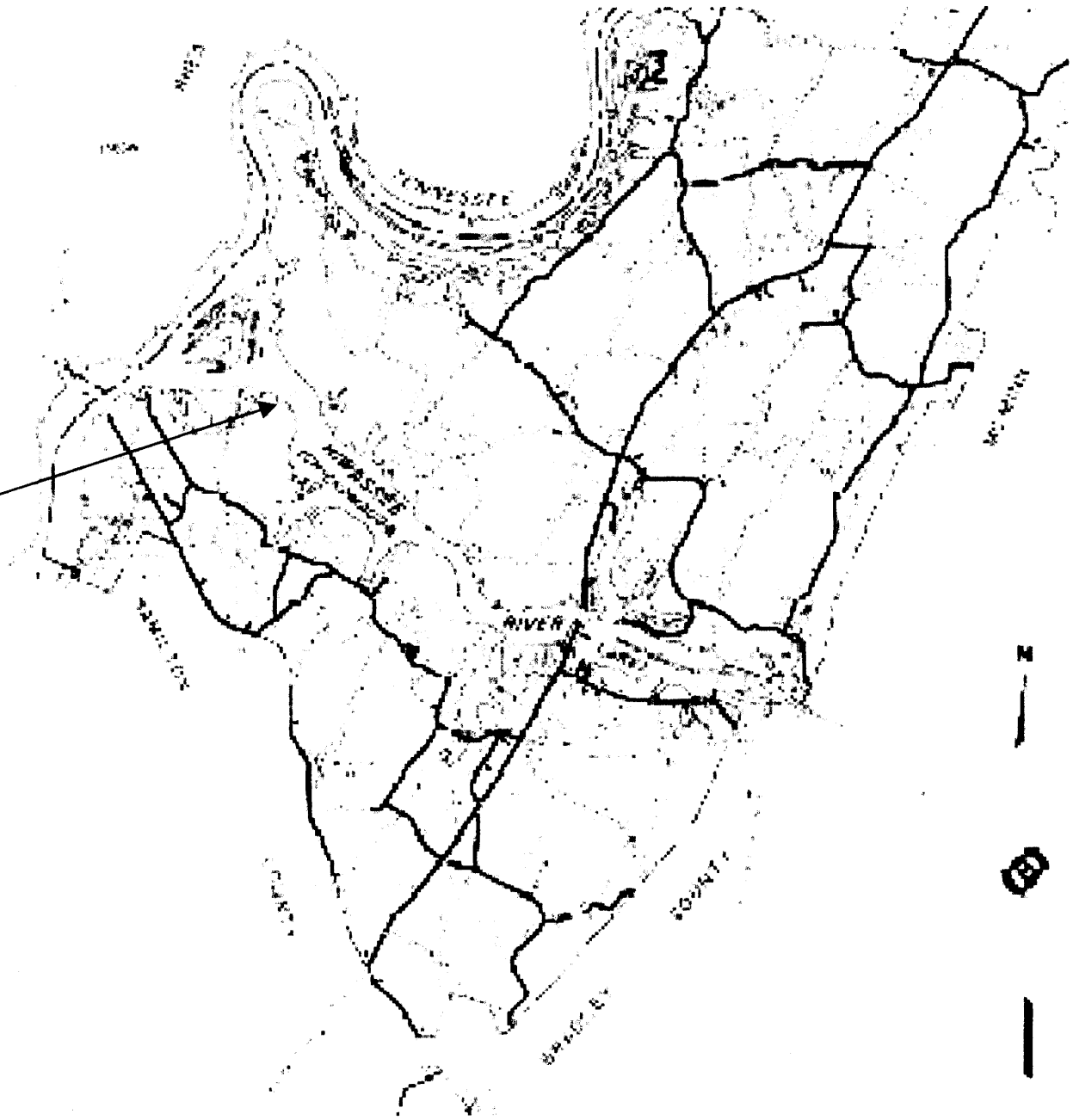
Enclosure #1

Regional Sources Small and Large



Enclosure #2

South West
Meigs County
Using River
as Boundary



Population Density

Data Classes

Persons/Sq Mile

51 - 51

53 - 53

67 - 67

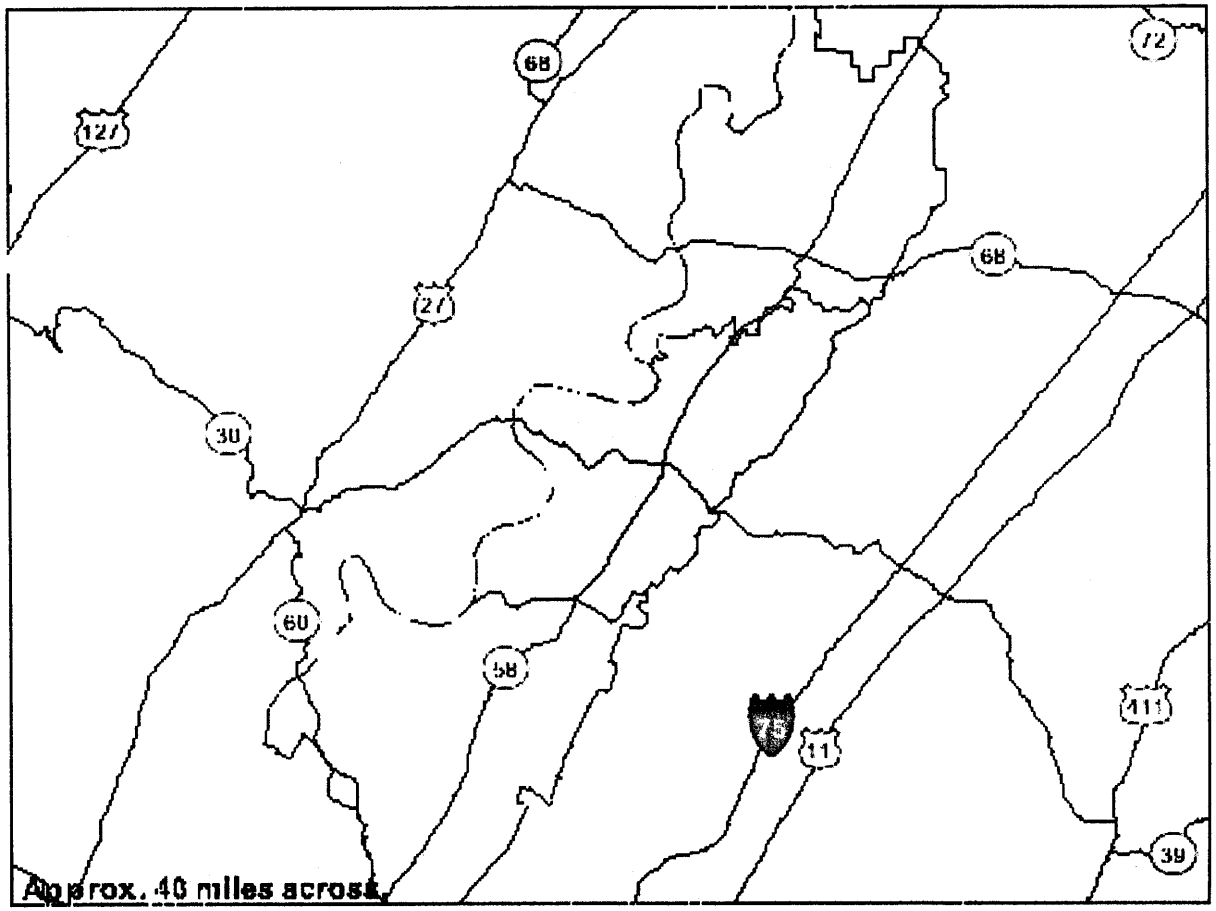
Features

Major Road

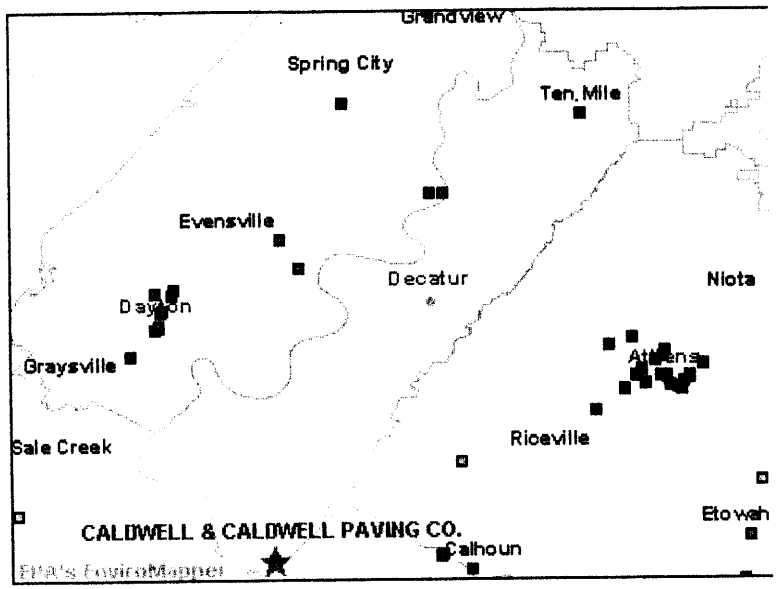
Stream/Waterway

Stream/Waterway

Items in text are not visible at this zoom level

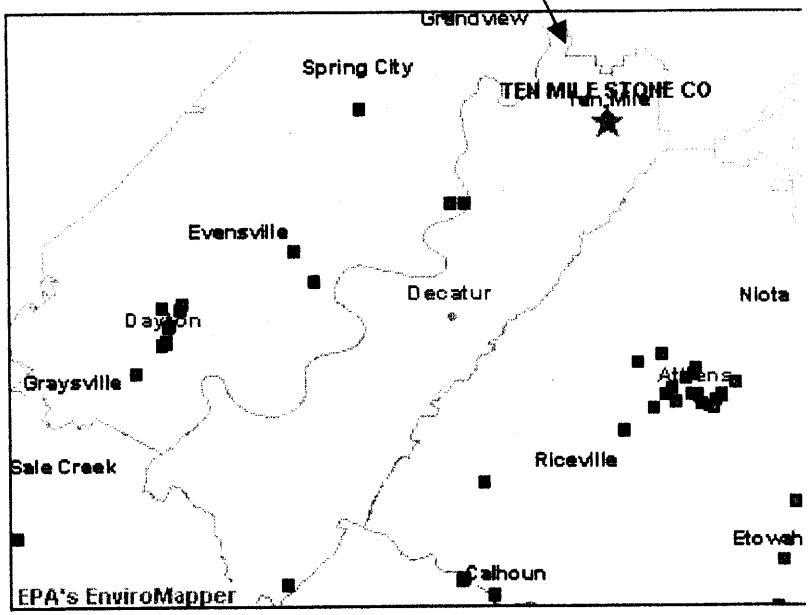


Tennessee Permitted Sources in Meigs Co.



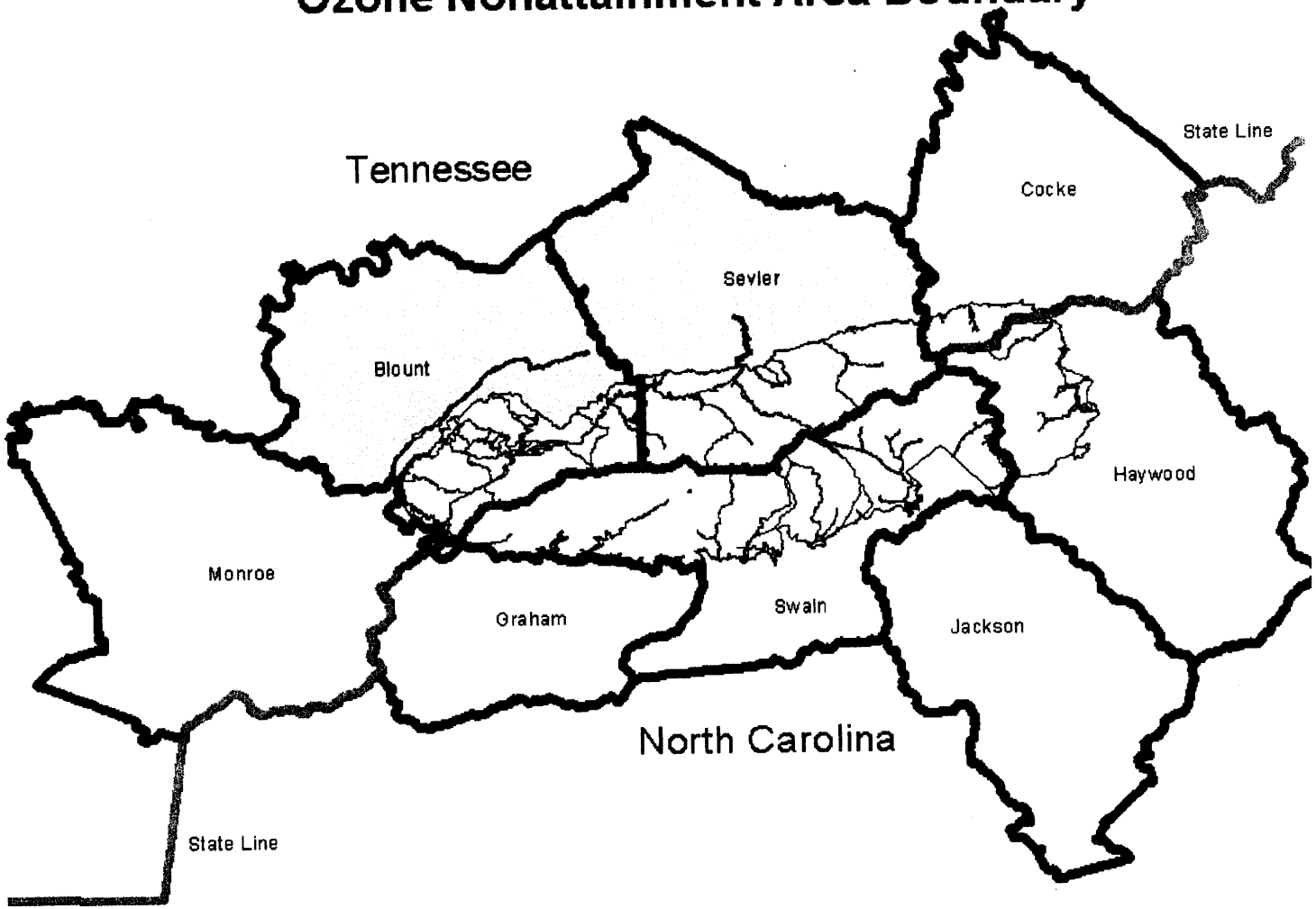
Caldwell & Caldwell Paving Co.

Ten Mile Stone Co.



Enclosure #3

Tennessee North Carolina GSMNP Ozone Nonattainment Area Boundary



GSMNP Ozone Nonattainment Boundary Area

Tennessee Proposed Nonattainment County Areas
(2001 - 2003 8 Hour Ozone DV)

GSMNP Boundary

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

BETSY L. CHILD
COMMISSIONER

PHIL BREDESEN
GOVERNOR

March 11, 2004

AIR PLANNING BRANCH
MAR 15 2004
EPA-REGION #4
ATLANTA, GA.

J.I. Palmer, Jr.
Regional Administrator
US EPA, Region IV
Atlanta Federal Center, 12th Floor
61 Forsyth Street, SW
Atlanta, GA 30303

RE: Tennessee's Revised Recommendations to EPA's Eight-Hour Ozone Nonattaiment Proposal

Dear Mr. Palmer:

On December 4, 2003, EPA announced its intention to declare twenty-seven Tennessee counties as being nonattainment for the eight-hour ozone NAAQS. The counties named in this letter did not match the list of counties that Tennessee recommended on July 14, 2003 with the supportive technical documentation provided on October 16, 2003 as amended on November 19, 2003. Tennessee requests EPA to reconsider their proposal and only name the counties recommended by Tennessee in this submittal for ozone nonattainment. Tennessee took into account the 11 factors of the March 28, 2000 boundary guidance factors in making its recommendations.

Tennessee filed an initial response to the EPA December 3, 2003 letter on December 9, 2003. In that letter, we asked EPA to explain its rationale for including the additional counties that Tennessee did not name. Specifically, we asked if EPA was listing these counties simply because of their inclusion in an MSA with at least one nonattaining monitor or if they were included solely because of their participation in an Early Action Compact. We have not received a response to that letter. Absent EPA's response on this request, we would state that if it is EPA's intent to name a county as nonattainment simply because of its participation in an Early Action Compact, there is no legal basis for their inclusion.

Tennessee has prepared a comparative evaluation with the reasons why Tennessee feels that EPA should declare only the following amended list of counties as nonattainment in

the final area designations. Tennessee may submit additional documentation if needed or requested by EPA.

Appendix I provides additional documentation from Montgomery County concerning the factors that affect EPA's designation determination. Appendix II provides documentation for reevaluation of Washington County as an attainment area and Appendix III is a new MSA graphic

If there is any additional documentation needed to support the State's recommendations, do not hesitate to contact Barry R. Stephens at (615) 532-0554.

Sincerely,

Betsy L. Child
Commissioner

Enclosures

cc: Kay Prince, EPA Region IV
Tennessee Air Pollution Control Board
Tennessee Local Air Programs

Area	EPA Recommended Nonattainment Counties (December 3, 2003)	Tennessee Revised Nonattainment Counties (March 4, 2004)	Tennessee Response to EPA's Recommended Counties
Chattanooga TN-GA	Hamilton, Marion and Meigs	**Hamilton and Portions of Meigs***	**Marion County** does not contribute a significant amount of ozone forming emissions to the area. The county is relatively rural; 79.3% and represents only 6% is the total MSA population. **Meigs County**, entirely rural in its population distribution has little population to contribute to the MSA (about 2% to the entire MSA). Similarly, there are virtually no stationary NO_X or VOC sources in the county. For this reason only the area southwest of the Hiwassee River in Meigs County should be designated nonattainment.
Clarksville-Hopkinsville TN-KY	Montgomery		**Montgomery County** emissions are identified by EPA as significant. There is evidence that transport from areas in northern Kentucky and further north are contributing to ozone levels monitored in Kentucky. Additionally, the federal military installation, Fort Campbell, is located in this area and is suspected of being the single largest contributor to mobile source emissions. It is unclear at this time, how mobile emissions from this installation could be mitigated and therefore managed in a manner that would bring about attainment without federal acknowledgement and intervention. [See Appendix I] for Montgomery County Analysis (Dated 3-3-2004)
Johnson City-Kingsport-Bristol, TN	Carter, Hawkins, Sullivan, Unicoi and Washington	**Sullivan**	**Carter County** represents only 2% of the NO_X point source emissions in the area. Mobile source emissions for both NO_X and VOC are also low in comparison to the other area counties. **Hawkins County** could be making a contribution to the ozone forming emissions. However, the electric generating facility in Hawkins County is subject to the NO_X SIP call, and at minimum would be required to add low NO_X burner controls thereby significantly reducing the impact to the area. Hawkins County also only represents 11% of the total MSA population with 61.4 % of the county being rural. **Unicoi County** is not making a

			significant contribution to the ozone forming emissions in the JC-K-B MSA area. Unicoi County represents less than one percent of the NO_X point source emissions strength and about 3% of the mobile source NO_X and VOC emissions. **Washington County (after further evaluation)** is not making a significant contribution to the ozone forming emissions in the JC-K-B MSA area. NO_X is only 1% of the point source strength, and preliminary modeling shows attainment by 2007. [See Appendix II] Washington County will also be a part of a new MSA under the 2000 Census. This new classification will increase the difficulty in addressing nonattainment planning because the county would not be a part of the other MSA in which Sullivan County is located. [See Appendix III]
Knoxville	Anderson, Blount, Knox, Loudon, Jefferson, Sevier and Union	**Anderson, Blount, Knox, Loudon, Sevier, Portions of Jefferson* and the GSMNP area***	**Union County,** almost entirely rural with population only 3% of the total for the Knoxville MSA, has the lowest emissions strength of all the counties in the MSA with 3% or less of the total. **Jefferson County** represents less than one percent of the NO_X point source emissions and about 7% of the VOC emissions with mobile source emissions of 12 and 8% respectively. These emissions are primarily located along or near the Hwy 11 and I 40 corridors through the county. For these reasons a partial county area extending from I 40 northward to include all of Jefferson County beyond the interstate should be designated nonattainment. **GSMNP** area is located across several counties in Tennessee and North Carolina. There are no industrial point sources of emissions in the park proper with an unknown portion of each county's respective mobile source contributions for NO_X and VOC. Ozone monitoring within the park at high elevation sites demonstrates a profound difference from those at lower elevations. The GSMNP is a federally controlled enclave within each of the two respective states. The area

			encompassed by the park boundaries in Tennessee and North Carolina should be designated with a separate nonattainment designation from the remaining nonattainment area in this MSA.
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*See attached suggested boundary for the partial county areas identified above.

Appendix I

CLARKSVILLE-MONTGOMERY COUNTY REGIONAL PLANNING COMMISSION
329 MAIN STREET; CLARKSVILLE TN 37040
PHONE: 931-645-7448 FAX: 931-645-7481

March 3, 2004

Commissioner Betsy Child
Tennessee Department of Environment and Conservation
L & C Tower, 21st Floor
401 Church Street
Nashville, TN 37243-1531

Dear Commissioner Child:

I am asking for your assistance in forwarding an eleven-factor analysis to EPA. As you are aware, Montgomery County does not have monitored violations of the ozone standard, nor is it significantly contributing to the nonattainment status of the Hopkinsville MSA. However, EPA stated in their December 3, 2003 letter that Montgomery County is within the presumptive boundary of the Hopkinsville nonattainment area, and that there was no information provided by Tennessee to exclude this County. The following analysis supports the modification of the nonattainment boundary, to exclude Montgomery County based on EPA's eleven factors.

Emissions and air quality in adjacent areas:

The NOx emission in 1999 was 4,171 tons per year and VOC emissions were 3,758 tons per year. Ozone levels in nearby areas such as Davidson County and Lawrence County Tennessee are currently less than the 8-hour limit, both at a 2003 design value of 0.077 ppm.

Population density and degree of urbanization:

By most criteria, Montgomery County has a low population and a low degree of urbanization. Prior to deployment of the 101st Airborne Division had an estimated population of 135, 023 in 2001. Montgomery County has a population density of approximately 250 individuals per square mile.

The deployment of the 101st Airborne Division, with some 24,000 troops over the past year and half significantly reduced the population of the county. This reduction includes the number of soldiers deployed, but also total population, as many families have relocated as a result of that deployment. To date approximately half of the soldiers have returned but recent announcements indicate that a significant number of troops will once again be deployed to continue the fight in "The War on Terrorism".

Monitoring data:

There is an ozone monitor in the Christian County, Kentucky. That monitor has declined to 0.085 ppm for the ozone three years ending in 2003. Christian County is only one thousandth of a part per million over the standard.

Location of emission sources:

There are relatively few industrial point sources in the county.

Traffic and commuting patterns:

It is estimated that Montgomery County had 1,216 vehicle miles traveled per year. Ft. Campbell sits near the Kentucky-Tennessee state line so when the 2000 Census revealed that 15,706 Montgomery commuters traveled to Christian County, Kentucky this is in fact solders and/or civilian employees going work at Ft. Campbell. They are not traveling further north into the City of Hopkinsville nor Central or Northern Christian County. The direct affect Ft. Campbell has on traffic patterns is evident in the Tennessee Department of Transportation's 2003 Annual Average Daily Traffic Counts (see attached letter). When attempting to collect counts, especially on the arterials that serve Ft. Campbell a change in traffic history patterns was revealed. Thus, most of the 2003 ADTs were estimated. It is evident, as the future deployments of solders from the 101st Airborne Division continue and family members relocate, a significant decline in vehicle traffic will result.

Expected growth:

The County has experienced some recent growth due to base closures, nationally and consolidation at Fort Campbell. It is obvious that future deployments are expected to dramatically reduce that rate of growth.

Meteorology:

The wind direction in Montgomery County is primarily from the southwest. This would mean that not only does Montgomery County not significantly contribute to the ozone levels measured in Christian County, it means on most days that there is no contribution from Montgomery County. See attachments on the back trajectory of wind direction on days that the Christian County monitor was in violation.

ATMOS modeling conducted under the direction of the Environmental Protection Agency consistently demonstrates that ozone levels measured in Tennessee primarily originate outside the region. That modeling also confirms that national controls will significantly reduce current levels of ozone by 2007.

Geography:

There are no unique geographical features effecting air quality.

Jurisdictional boundaries:

An existing 1-hour ozone standard maintenance area includes Davidson County.

Level of control of emission sources:

Fort Campbell's Environmental Division has implemented a number of activities, which have decreased emissions of ozone precursors. The largest source of ozone precursors at the base has historically been volatile organic compounds resulting from coating operations. As a result of this project and pollution prevention efforts, steps were taken during the year 2000 to replace organic solvent based coatings, thinners, and clean-up products with water based coatings for the repair and coating operations of vehicles. This substitution was methodically implemented and tested to insure that required specifications would be continuously met.

Since 2002, the three spray booths that conduct coating operations on ground vehicles and other miscellaneous metal parts (not including aerospace vehicle and components) exclusively use water-based coatings, thinners and clean-up products. This has resulted in an approximately 90 percent reduction of VOC (a "surface" ozone precursor) emissions to the ambient environment.

The gates at Ft. Campbell have been or are in the process of reconstruction to modify their cross-sections from one lane to three lanes. This has significantly reduced waiting times for vehicles and therefore lowered emission levels. We are currently working with the Federal Highway Administration, Tennessee Department of Transportation, Kentucky Transportation Cabinet and the Business Public Works Center at Ft. Campbell to implement an Intelligent Transportation System to better serve the tens of thousands of vehicles that enter and exist the complex on a daily basis. The ITS will utilize cameras and variable message signs to provide updated and "real-time" travel conditions and gate information to motorists. This will increase the efficiency of ingress and egress thus reducing emission levels. In addition, the City of Clarksville's Signalization Interconnect System is utilizing fiber optic cable to coordinator eighty intersections of Major and Minor Arterials that carry 10,000 – 30,000 vehicles on a daily basis. Said system will reduce stop and go movements, reduce travel times while improving the overall traffic flow that will result in lower vehicular emission levels.

Finally, Fort Campbell has constructed a large rail-marshalling (loading) yard to handle military equipment, which increased capacity four times the previous capacity. This has significantly reduced truck and train congestion and traffic that will result in lower emissions.

Fort Campbell is the single largest contributor to mobile source emissions. It is not know how these emissions could be mitigated and managed to bring about attainment without potentially restricting combat training exercises and delaying deployment activities. Both of these are key components of military readiness, which are linked to paramount interest of the United States and National Security.

Most of the emission controls currently and planning to be implemented are national controls on vehicles and fuels.

Regional emission reductions:

The Tennessee Valley Authority has invested heavily in NOx reductions over the past three years at its major coal fired electricity generation facilities. Those improvements started to come on line with the 2002 ozone season and should be essential complete by the 2004 ozone season. TVA will have spent $6 billion dollars in pollution controls by the completion of their Synthetic Catalytic Reduction installation. It is my understanding that said facilities are subject to the NOX SIP calls of the State of Tennessee and the Commonwealth of Kentucky.

Conclusion:

The Clean Air Act requires an area to be designated nonattainment if it has a monitor, which demonstrates nonattainment or contributes to an adjacent area, which is not meeting the standard. Montgomery County does not meet either criteria.

The Environmental Protection Agency has listed eleven factors to be considered by a state in recommending a smaller boundary area than the MSA for nonattainment. The State of Tennessee has recommended the exclusion of Montgomery County and the above analysis supports that decision.

Air quality nationally, statewide and regionally is improving. Ozone precursors from electrical power plants, motor vehicles and large industries have been dramatically reduced. Although Montgomery County is undertaking many local measures which will contribute to overall air quality improvements, their nonattainment designation would have not have any impact on the air quality measured in adjacent Christian County. The designation would impose an unfair burden on Montgomery County potentially effecting economic and environmental progress. Montgomery County should be excluded from the Christian County nonattainment area.

Thank you for your assistance in the matter. Should you have any questions and or need additional information, contact me at your convenience.

Sincerely,

J. Stan Williams
Transportation Planning Coordinator

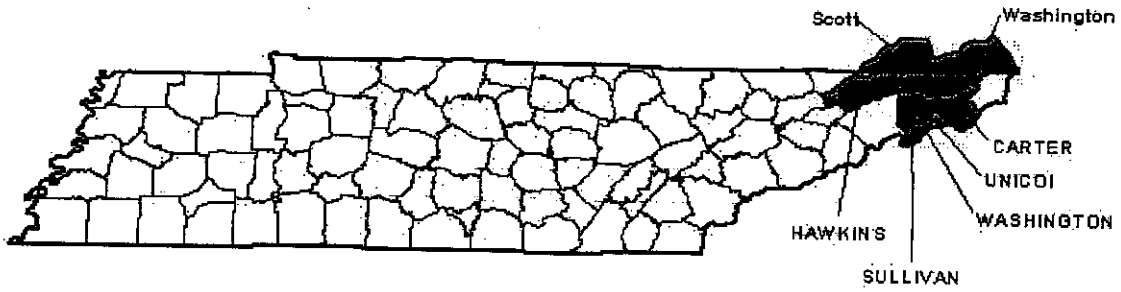
Cc: Governor Phil Bredesen
Barry R. Stephens
Beverly Houston Banister
Steven Page
Senator Bill Frist
Senator Lamar Alexander
Congressman John Tanner
Congressman Marsha Blackburn
Commissioner Matt Kisber
Montgomery County Mayor Doug Weiland
Clarksville Mayor Don Trotter

Appendix II

Johnson City-Kingsport-Bristol TN-VA MSA

(Tri-Cities)

Tennessee MSA Areas Pre-2000 Census



Johnson City-Kingsport-Bristol MSA Area

The Johnson City-Kingsport-Bristol TN-VA Metropolitan Statistical Area (hereafter referred to as JC-K-B MSA) encompasses two states and seven counties. It includes Carter, Hawkins, Sullivan, Unicoi, and Washington counties in upper East Tennessee, as well as Scott and Washington counties in southwest Virginia. In 2000, this MSA was listed as the 84th largest MSA within the United States.

Washington County, Tennessee

Geography/Topography

Washington County has a land area of 326 square miles and is located in the Valley and Ridge region of the East Grand Division of the State. It is located in the southeast portion of the MSA, and the southeast portion of the county is in elevated terrain within the boundary of the Cherokee National Forest.

Meteorological Information

Wind data from Bristol, TN for the period of record from 1988 through 1992 was determined to be representative for Washington County. The predominate wind direction and speed is from the south-southwest at 7 to 10 knots (see Figure 1 A). The mean high temperature for July is 84.8 F, while the mean low is 63.5 F. The mean July precipitation is 4.2 inches. The period of record for this data is from 1971 through 2000.

Planning Authority

The authority for air quality planning for Washington County resides with the Tennessee Department of Environment and Conservation. Transportation planning for Washington County is performed by the Tennessee Department of Environment and Conservation.

Air Monitoring

Washington County does not have an ozone monitor. For the 2001-2003 monitoring period, the ozone monitors located in Sullivan County are showing 8-hour design values of 0.086 parts per million (ppm) which would be classified as nonattainment (see Table 1 A).

Population

Based on projections to 2002 from the 2000 census data, there are 109,019 persons living in Washington County (see Table 1 C). This indicates a population density of 334 persons per square mile. The population of Washington County is approximately 32.6% rural with the remaining 67.4% living in incorporated areas.

Washington County's population from 1990 through 2000 increased by approximately 16% (92,621 to 107,198). The population is expected to increase by 8% between 2000 and 2010 (see Table 1 B).

Based on the 2002 population data for the entire JC-K-B MSA, Washington County represents approximately 23% of the total JC-K-B MSA population (see Table 1 C).

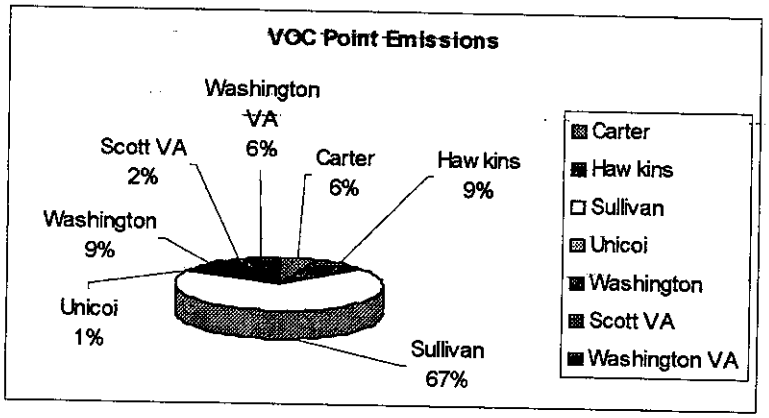
Air Emissions

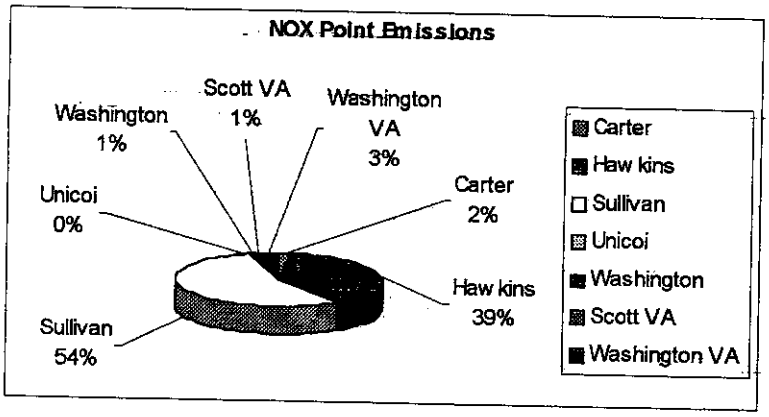
All air emission estimates were derived from EPA's 1999 National Emission Inventory (NEI) database.

Point source NOX emissions from Washington County were estimated at 1.22 ton/day in 1999 which represents approximately 1% of the 95.21 ton/day of overall NOX point source emissions from the JC-K-B MSA (see Table 1 D).

Point source VOC emissions from Washington County were estimated at 14.51 ton/day in 1999 which represents approximately 9% of the 150.45 ton/day of overall VOC point source emissions from the JC-K-B MSA (see Table 1 D).

1999 NEI Point Source Emissions
(ton/day)



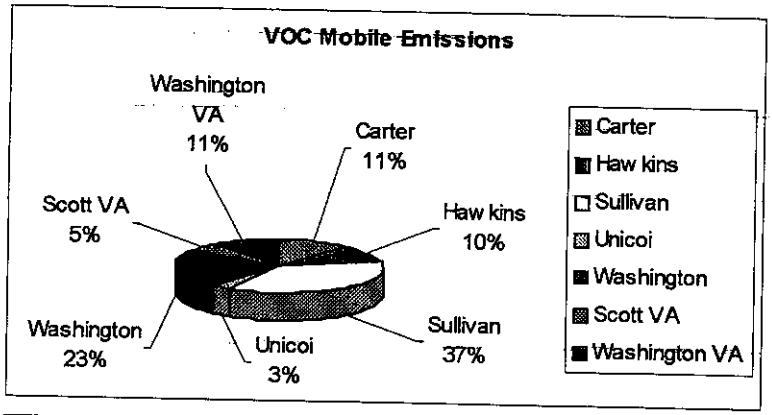


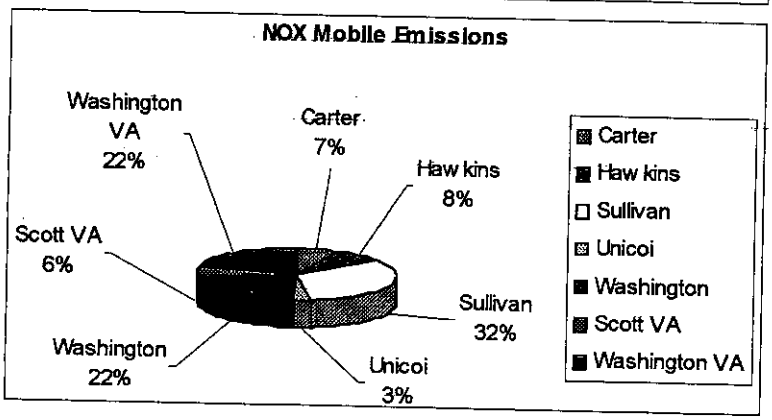
For NOX and VOC control, point sources located within Washington County are subject to Prevention of Significant Deterioration (PSD) requirements, Control Technology Guideline Reasonable Available Control Technology (CTG RACT) requirements, Maximum Achievable Control Technology (MACT) requirements for Hazardous Air Pollutants (HAP), and New Source Performance Standards (NSPS).

Mobile source NOX emissions from Washington County were estimated at 16.04 ton/day in 1999 which represents approximately 22% of the 74.14 ton/day of overall NOX mobile source emissions from the JC-K-B MSA (see Table 1 D).

Mobile source VOC emissions from Washington County were estimated at 8.80 ton/day in 1999 which represents approximately 23% of the 38.24 ton/day of overall VOC mobile source emissions from the JC-K-B MSA (see Table 1 D).

1999 NEI Mobile Source Emissions
(ton/day)

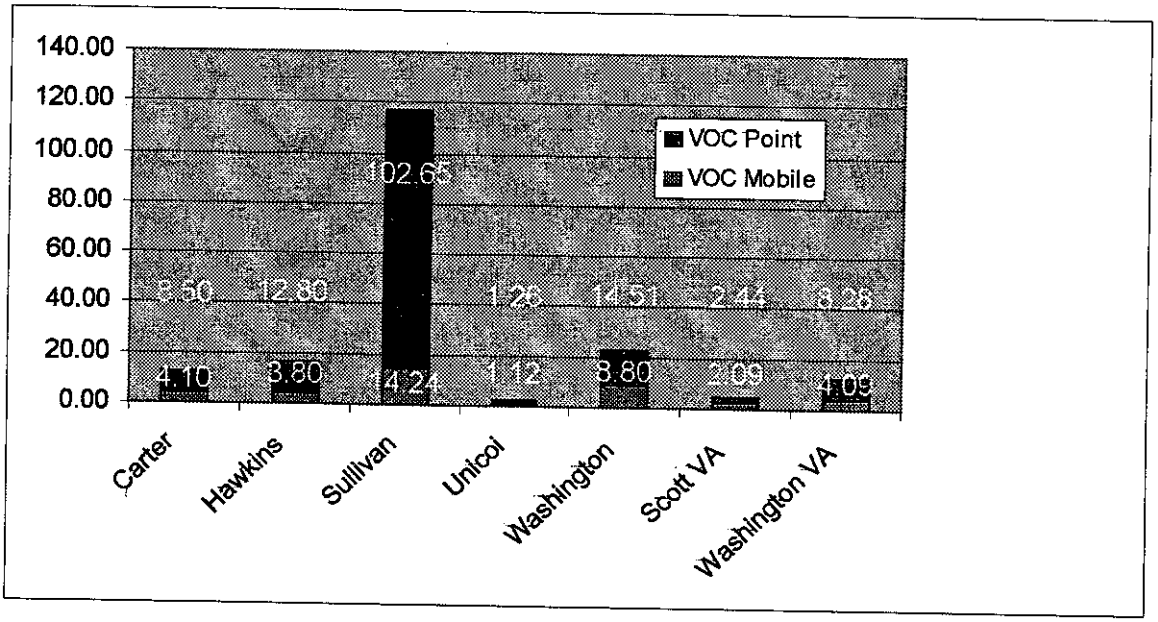




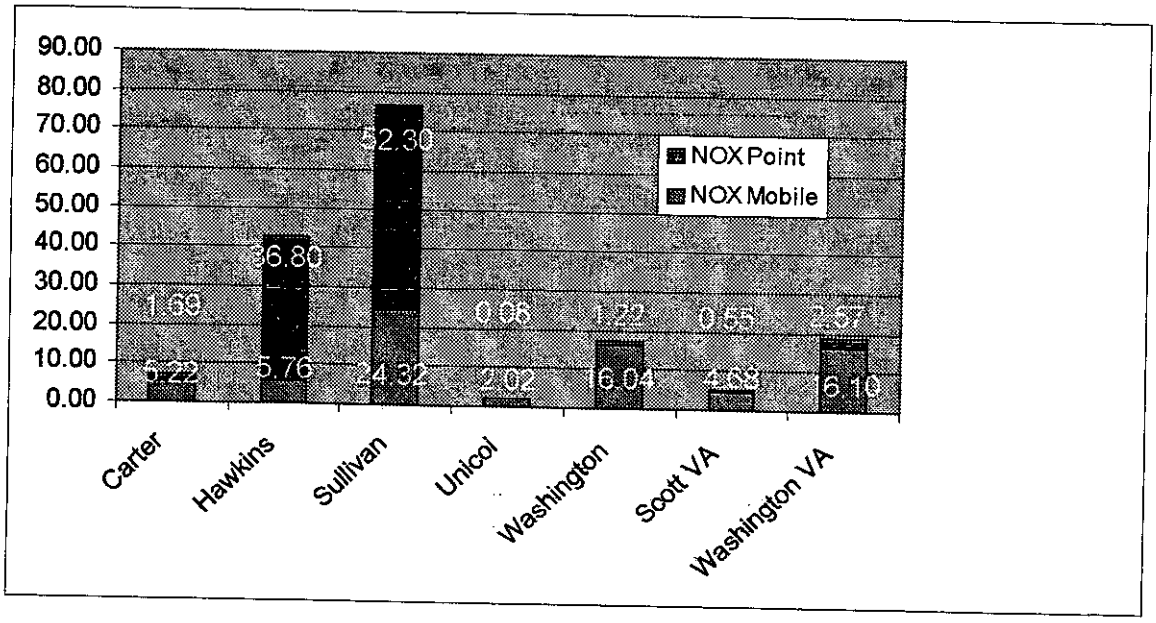
Commuting traffic from surrounding counties into Washington County is minimal. Commuting traffic from Washington County into surrounding counties is high.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

1999 NEI VOC Contribution
(ton/day)



1999 NEI NOX Contribution
(ton/day)



Conclusion and Recommendation

Preliminary analysis of the 2003 ozone data for the representative monitor indicates that the 2001-2003 design value will be approximately 0.086 ppm. At this point it is highly unlikely that final quality assurance of the 2003 data will change this result significantly.

Washington County is responsible for only 1% of the point source NOX emissions in the EAC.

The latest UAM model run – testing national measures alone – predicts an estimated design value (EDV) for the EAC of 84 ppb by 2007.

Therefore, Washington County should be designated attainment for the 8-hour ozone standard.

JC-K-B MSA

Figure 1 A
JC-K-B MSA
Wind Rose

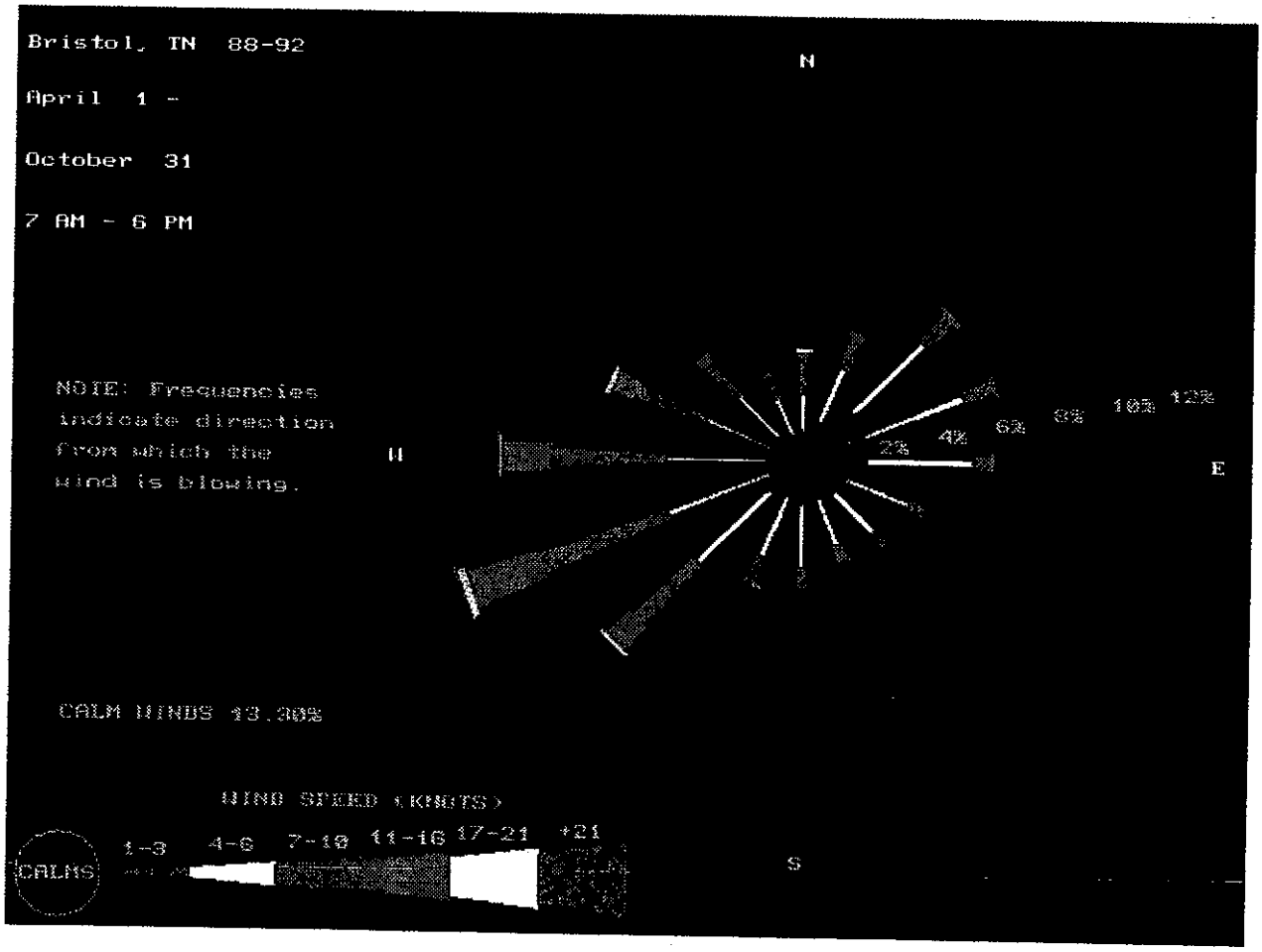
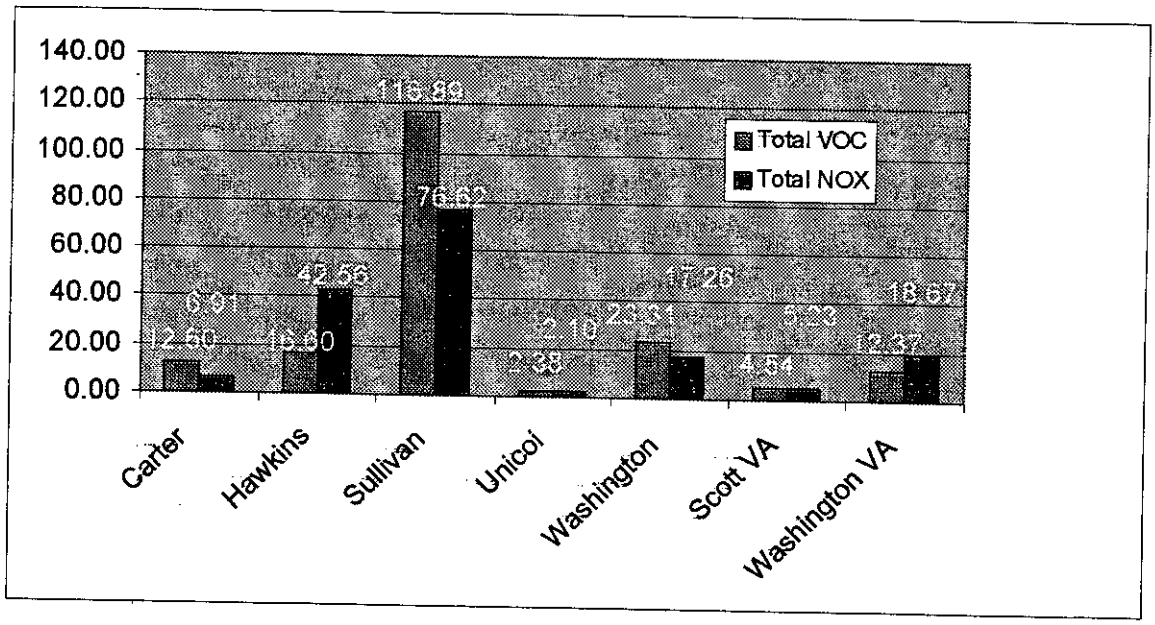


Figure 1 B
JC-K-B MSA
1999 NEI VOC and NOX Emissions

(ton/day)



140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Total VOC
Total NOX
12.60
6.91
16.60
42.56
116.89
76.62
2.38
2.10
23.31
17.26
4.54
5.23
12.37
18.67
Carter
Hawkins
Sullivan
Unicoi
Washington
Scott VA
Washington VA

Table 1 A
JC-K-B MSA
Ozone Design Values
(ppm)

County	Site Name	MONITOR ID	1999 2001 Design Value PPM	2000 2002 Design Value PPM	2001 2003 Design Value PPM
Sullivan	Hill Road	471632002 - 1	0.087	0.090	0.086
Sullivan	Ketron Middle School On Bloomingdale Rd.	471632003 - 1	0.090	0.092	0.086

Table 1 B
JC-K-B MSA
Population Growth Data

County	Population 1990	Population 2000	PERCENT CHANGE 1990 - 2000	Population 2002	Area in Square Miles	2002 Pop. Density (Sq. Mile)	Projection 2010	% Growth 2000 - 2010
Tennessee								
Carter	51,589	56,742	10.0	56,746	341.05	166.4	53,630	-5.5
Hawkins	44,617	53,563	20.1	54,793	486.66	112.6	54,521	1.8
Sullivan	143,819	153,048	6.4	153,051	413.02	370.6	156,630	2.3
Unicoi	16,534	17,667	6.9	17,740	186.14	95.3	18,059	2.2
Washington	92,621	107,198	15.7	109,019	326.31	334.1	115,998	8.2
Virginia								
Scott	23,204	23,403	0.9				23,400	0.0
Washington	45,887	51,103	11.4				52,400	2.5
Bristol City	18,426	17,367	-5.7				16,800	-3.3
TOTALS	436,697	480,091		391,349			491,438	

Table 1 C
JC-K-B MSA
2002 Population Estimates

Tennessee Counties		Population
Carter		56,746
*Elizabethton	(13,372)	
Hawkins		54,793
*Church Hill	(5,916)	
Sullivan		153,051
*Bristol	(24,821)	
*Kingsport	(44,905)	
Unicoi		17,740
*Erwin	(5,610)	
Washington		109,019
*Johnson City	(55,469)	
TN TOTALS		391,349

Virginia Counties	Population
*Scott	23,403
*Washington	51,103
*Bristol City	17,367
VA TOTALS	91,873

TN & VA TOTALS	483,222

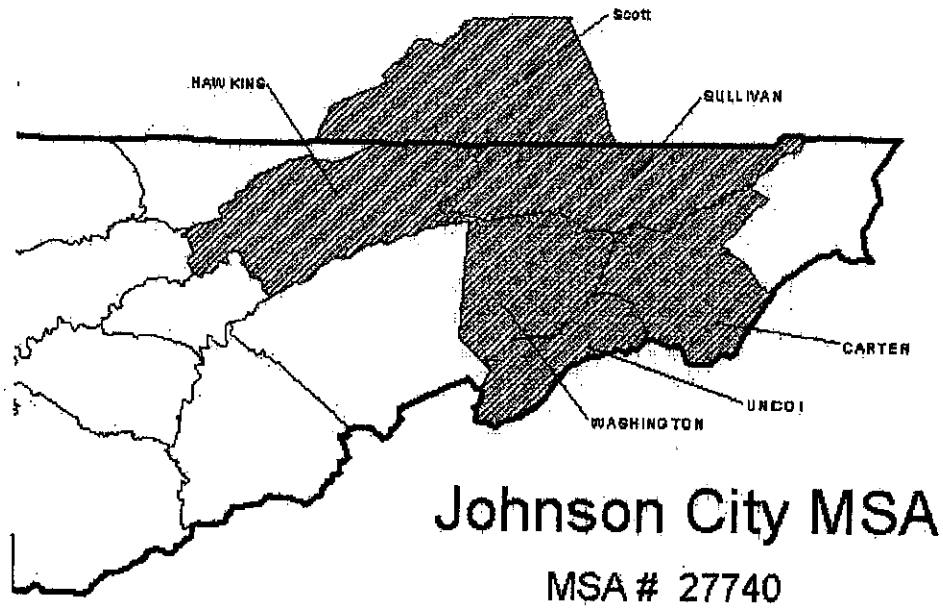
* Based on 2000 Census Data

Table 1 D
JC-K-B MSA
1999 NEI VOC and NOX Emissions
(ton/day)

County	VOC Mobile	VOC Point	VOC Total	NOX Mobile	NOX Point	NOX Total
Carter	4.10	8.50	12.60	5.22	1.69	6.91
Hawkins	3.80	12.80	16.60	5.76	36.80	42.56
Sullivan	14.24	102.65	116.89	24.32	52.30	76.62
Unicoi	1.12	1.26	2.38	2.02	0.08	2.10
Washington	8.80	14.51	23.31	16.04	1.22	17.26
Scott VA	2.09	2.44	4.54	4.68	0.55	5.23
Washington VA	4.09	8.28	12.37	16.10	2.57	18.67
TOTAL	**38.24**	**150.45**	**188.69**	**74.14**	**95.21**	**169.35**

Appendix III

New 2000 Census MSA Areas

MSA # 28700

Kingsport-Bristol, TN-VA MSA