Boundary Recommendations for South Carolina for the Remanded 8-Hour Ozone Standard

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South Carolina Department of Health and Environmental Control

July 14, 2000

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State of South Carolina

Office of the Governor

JIM HODGES
GOVERNOR

POST OFFICE BOX 11829
COLUMBIA 29211

July 14, 2000

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Mr. John H. Hankinson, Jr., Administrator
United States Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Dear Mr. Hankinson:

This letter and the supporting attachments from Mr. R. Lewis Shaw, P.E., Deputy Commissioner for Environmental Quality Control, South Carolina Department of Health and Environmental Control, are submitted to you to fulfill our obligation under the Clean Air Act and the Transportation Equity Act for the 21st Century (TEA-21). I must emphasize that this submittal is being made with great reluctance and strong objection.

As you are aware, on July 18, 1997, the United States Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standard for ground-level ozone. Since its imposition, this revised, more stringent standard has been the subject of great controversy and federal litigation. The federal courts have remanded the standard to EPA and indicated that this standard may not yet be enforced; however, these same courts have left the process open for proceeding with designations. While this matter is still under litigation and is currently under review by the U.S. Supreme Court, the EPA issued guidance this spring updating its plans to move forward with designations of areas as attainment/unclassifiable or non-attainment for the 8 hour ozone standard. As part of this guidance and pursuant to requirements of the Clean Air Act, EPA has requested that each State provide recommendations to EPA of those areas that appear not to comply with this revised, yet unresolved, standard.

One of the prime concerns EPA indicates as a reason to proceed with 8 hour ozone designations is that citizens in an affected area have a right to be made aware of the air quality conditions in their areas. We concur that the health of our citizens is of primary concern. We have demonstrated our continued commitment to ensuring cleaner air for our citizens by achieving compliance with all national air quality standards for more than a decade. Furthermore, we are meeting this concern by monitoring ozone levels based on the 8-hour ozone standard and assuring public awareness by advising our citizens of local air quality through our state-wide voluntary ozone awareness campaign. In addition, the technical foundation to allow implementation of any necessary control strategies is being prepared to ensure that South Carolina's air quality maintains national standards.

Because of the confusion resulting from the Court's decision, I disagree with EPA's desire to proceed with designations; such an action is inappropriately disruptive and premature. The most appropriate course of action for EPA to take with regard to the remanded 8 hour ozone standard is to defer the identification of designations and boundaries until final resolution and clarification have been provided by the courts and/or Congress. South Carolina's Congressional delegation concurred with deferral of this matter by their unanimous support of the Collins amendment. This U.S. House of Representatives' amendment prohibits EPA from using any funds in the FY-2001 appropriations bill for the purposes of designating areas as non-attainment.

The on-going litigation which encompasses this revised ozone standard leaves us in a quandary over the timing and ultimate consequences of proceeding with non-attainment designations. For example, the

requirements to implement and enforce transportation conformity and additional new source review conditions become effective immediately upon a designation of non-attainment even though the non-attainment is based on an unresolved standard.

Unfortunately, pursuant to the Clean Air Act, should South Carolina not make specific recommendations, such inaction could ultimately leave this decision entirely at the discretion of the EPA. I do not believe that such a course of action would be prudent, nor in the best interest of South Carolina. Therefore, with great reluctance, concern, and objection and without waiving any rights to assertively protect our interests both through litigation and in seeking Congressional intervention, Mr. Shaw will provide documentation for areas (or portions thereof) of South Carolina for designation under the remanded 8 hour ozone standard in order to comply with Section 107(d) of the Clean Air Act.

While we have submitted recommendations as required, I respectfully request that you consider South Carolina's concerns regarding EPA's proceeding with 8 hour ozone designations at this time. Specifically I urge you not to promulgate final designations and to delay and ultimately avoid imposition of any transportation conformity and non-attainment new source review requirements until final resolution and clarification of the remanded 8-hour ozone standard are provided. Should you have questions or concerns regarding this matter please contact Mr. Shaw at (803) 898-3900.

Sincerely,

Jim Hodges

Jim Hodges

cc: The Honorable Albert Gore, Jr.
The Honorable Strom Thurmond
The Honorable Fritz Hollings
The Honorable James Clyburn
The Honorable John Spratt
The Honorable Floyd Spence
The Honorable Marshall Sanford
The Honorable Lindsey Graham
The Honorable Jim DeMint
Doug Bryant, Commissioner, DHEC
Lewis Shaw, Deputy Commissioner, EQC, DHEC
Carol Browner, Administrator, USEPA

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July 14, 2000

Mr. John H. Hankinson, Jr., Administrator
United States Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Dear Mr. Hankinson:

As indicated by Governor Hodges in his letter dated July 14, 2000, I am providing recommendations for non-attainment boundaries for the remanded 8-hour ozone standard. Governor Hodges identified significant issues and concerns regarding the United States Environmental Protection Agency's (EPA) approach in this matter. As such, and in order to avoid a verbatim reiteration of his concerns within this letter, any review of South Carolina's position should be based on Governor Hodges' letter of July 14, 2000, this letter, and supporting documentation.

While we recognize our approach may vary from limited guidance EPA has provided, our strong commitment to public health and environmental protection remains. South Carolina has demonstrated a continued commitment to ensuring clean air for our citizens by achieving compliance with all national ambient air quality standards for more than a decade. South Carolina fully intends to meet any revised national standard for ozone as expeditiously as possible. We will continue to monitor and forecast ozone levels based on the remanded 8-hour ozone standard, to assure public awareness by advising our citizens of local air quality through our state-wide voluntary ozone awareness campaign, and to actively seek and implement reasonable control measures.

Should EPA elect to proceed despite all of our objections, we believe boundary areas should be established based on an assurance of ultimate attainment of the standards, not on the size of the boundaries. Therefore, any boundary determinations by EPA for South Carolina should be based on seven (7) distinct Metropolitan Planning Organization (MPO) boundaries represented by ozone monitors having design values above the remanded 8-hour standard. As identified in the attached supporting documentation, these MPO boundaries contain the most urbanized affected portions of the state. Also, these organizations oversee the detailed data and efforts needed to address transportation planning and conformity determinations. South Carolina has the statutory authority to require appropriate controls on industrial and mobile sources outside of any established non-attainment boundary, as necessary.

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Based on the above, and consistent with all concerns and objections raised in Governor Hodges' letter, dated July 14, 2000, the following list of areas (or portions thereof) of South Carolina are recommended for designation under the remanded 8-hour ozone standard:

Area (or portion thereof)	Designation
Columbia MPO - That portion of Lexington, Richland, and Calhoun counties distinctly defined and known as the Columbia Area Transportation Study (COATS).	Non-attainment
Greenville MPO - That portion of Greenville, Laurens, Pickens, and Spartanburg counties distinctly defined and known as the Greenville Area Transportation Study (GRATS).	Non-attainment
Spartanburg MPO - That portion of Spartanburg County distinctly defined and known as the Spartanburg Area Transportation Study (SPATS).	Non-attainment
Aiken MPO - That portion of Aiken and Edgefield counties distinctly defined and known as the South Carolina portion of the Augusta Regional Transportation Study (ARTS).	Non-attainment
Rock Hill/Fort Mill MPO - That portion of York County distinctly defined and known as the Rock Hill/Fort Mill Area Transportation Study (RFATS).	Non-attainment
Florence MPO - That portion of Florence and Darlington counties distinctly defined and known as the Florence Area Transportation Study (FLATS).	Non-attainment
Anderson MPO - That portion of Anderson County distinctly defined and known as the Anderson Area Transportation Study (ANATS).	Non-attainment
Rest of South Carolina	Attainment/Unclassifiable

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These recommendations are based on 1997-1999 monitored ozone data. Should circumstances dictate the delay of designations by EPA, we request that South Carolina be provided the opportunity to use the most recent data available for determining boundaries and designations before proposed and/or final designations are made.

The above recommendations include two areas that border adjacent states' urban areas. South Carolina is committed to working with adjacent states to assure mutual attainment of national standards. However, should EPA proceed with non-attainment designations, we specifically request that EPA delineate South Carolina's boundaries independent from any adjacent state's non-attainment area. This will facilitate areas of non-attainment being re-designated as attainment as expeditiously as possible.

While supporting information for these recommendations is attached, let me re-emphasize South Carolina's request that EPA not promulgate final designations and to delay and ultimately avoid imposition of any transportation conformity and non-attainment new source review until final resolution and clarification of the remanded 8-hour ozone standard are provided. We repectfully request that EPA provide us with the opportunity to participate in and comment on any actions relative to ozone boundary determinations involving South Carolina.

Should you have questions or concerns regarding this matter, please contact me or Mr. James A. Joy, III, P.E., Chief, Bureau of Air Quality, SCDHEC at (803) 898-4123.

Sincerely,

R. Lewis Shaw

R. Lewis Shaw, P.E.
Deputy Commissioner
Environmental Quality Control
South Carolina Department of Health and Environmental Control

Attachment

cc: The Honorable Strom Thurmond
The Honorable Fritz Hollings
The Honorable James Clyburn
The Honorable John Spratt
The Honorable Floyd Spence
The Honorable Marshall Sanford
The Honorable Lindsey Graham
The Honorable Jim DeMint
Doug Bryant, Commissioner, DHEC
Carol Browner, Administrator, USEPA

Summary of Boundary Recommendations for the Remanded 8-Hour Ozone Standard in South Carolina

The 8-hour ozone boundary recommendations submitted herein are to fulfill our obligation under the Clean Air Act and the Transportation Equity Act for the 21st Century (TEA-21). These recommendations are submitted with great reluctance and strong objection due to the fact that this matter is still under litigation and is currently under review by the U.S. Supreme Court. Using the Environmental Protection Agency's (EPA) guidance, several areas of the state are being recommended for non-attainment designation using 1997-1999 monitored ozone data. The South Carolina Department of Health and Environmental Control (Department) requests the courtesy of consulting with EPA as this information is reviewed. Should circumstances dictate the delay of designations by EPA, we request to be provided the opportunity to use the most recent data available for determining boundaries and designations before proposed and/or final designations are made.

South Carolina's boundary recommendations for the non-attainment designation of the remanded 8-hour ozone standard are the seven distinct Metropolitan Planning Organization (MPO) boundaries. This recommendation is based upon data from monitors representing the urbanized portions of Anderson, Aiken, Columbia, Florence, Greenville, Spartanburg, and Rock Hill. These areas form the MPO boundaries that are shown on Map 1 and identified separately in the following pages.

These MPOs capture the most urbanized portions of the state that have ozone design values above the remanded 8-hour standard. Additionally, much of the detailed data needed for transportation planning and conformity determinations is based on the MPO boundaries. Although we are recommending smaller non-attainment boundaries to ensure public health protection and attainment of all National Ambient Air Quality Standards (NAAQS), it is important to know that further controls will be considered for industries and mobile sources outside of the non-attainment boundaries. South Carolina has the statutory authority to require statewide controls of all regulated pollutants and will seek any necessary control strategies to address ozone precursors (volatile organic compounds and oxides of nitrogen).

South Carolina currently has two separate standards that regulate volatile organic compound (VOC) emissions. South Carolina Regulation 61-62.5, Standard 5.1, Lowest Achievable Emission Rate (LAER) applies to all new, modified, or altered sources that would increase emissions of VOCs. LAER is applied to new construction or modifications when the net VOC emissions increase exceeds 100 tons per year.

In addition, Regulation 61-62.5, Standard 5, outlines the Reasonably Available Control Technology (RACT) for VOCs. This standard applies to existing processes statewide with the exception of the following six counties: Anderson, Bamberg, Barnwell, Chesterfield, Darlington and Hampton. We are considering revising this standard to remove the exemption for the six counties listed above.

The Department continues to be very supportive of the EPA's Tier 2 and low sulfur fuel regulations, finalized February 10, 2000, making passenger cars, light trucks, and larger passenger vehicles even cleaner beginning in 2004. The regulation focuses on reducing the emissions most responsible for ozone formation and particulate matter (PM) impact from these vehicles. For the first time, the

same set of federal standards will apply to all passenger cars, light trucks, and medium-duty passenger vehicles, ensuring that essentially all future passenger-use vehicles will be very clean vehicles. Another part of this regulation significantly reduces the average gasoline sulfur levels nationwide to a 30 ppm average and a 80 ppm cap by 2006. We feel that the implementation of these regulations will provide significant assistance towards statewide compliance with the NAAQS in the areas where it is needed the most, our urbanized areas. The full extent of that benefit is not yet known. On May 1, 2000, we requested from EPA an analysis similar to one they had performed for another state detailing expected emission reductions from the above regulations. Fulfilling our request would have assisted us in verifying the necessary size of our boundary recommendation; however, our request was denied by EPA on May 10, 2000. [see Appendix G]

The Department also supports a national approach to address both diesel fuel and heavy-duty diesel engine emissions. South Carolina citizens would receive tremendous air quality benefits from a national program that addresses heavy-duty diesel emissions and low-sulfur diesel fuel. The Department has encouraged EPA to take the necessary steps to enact, by no later than 2007, more stringent on-road and non-road heavy-duty diesel emission standards.

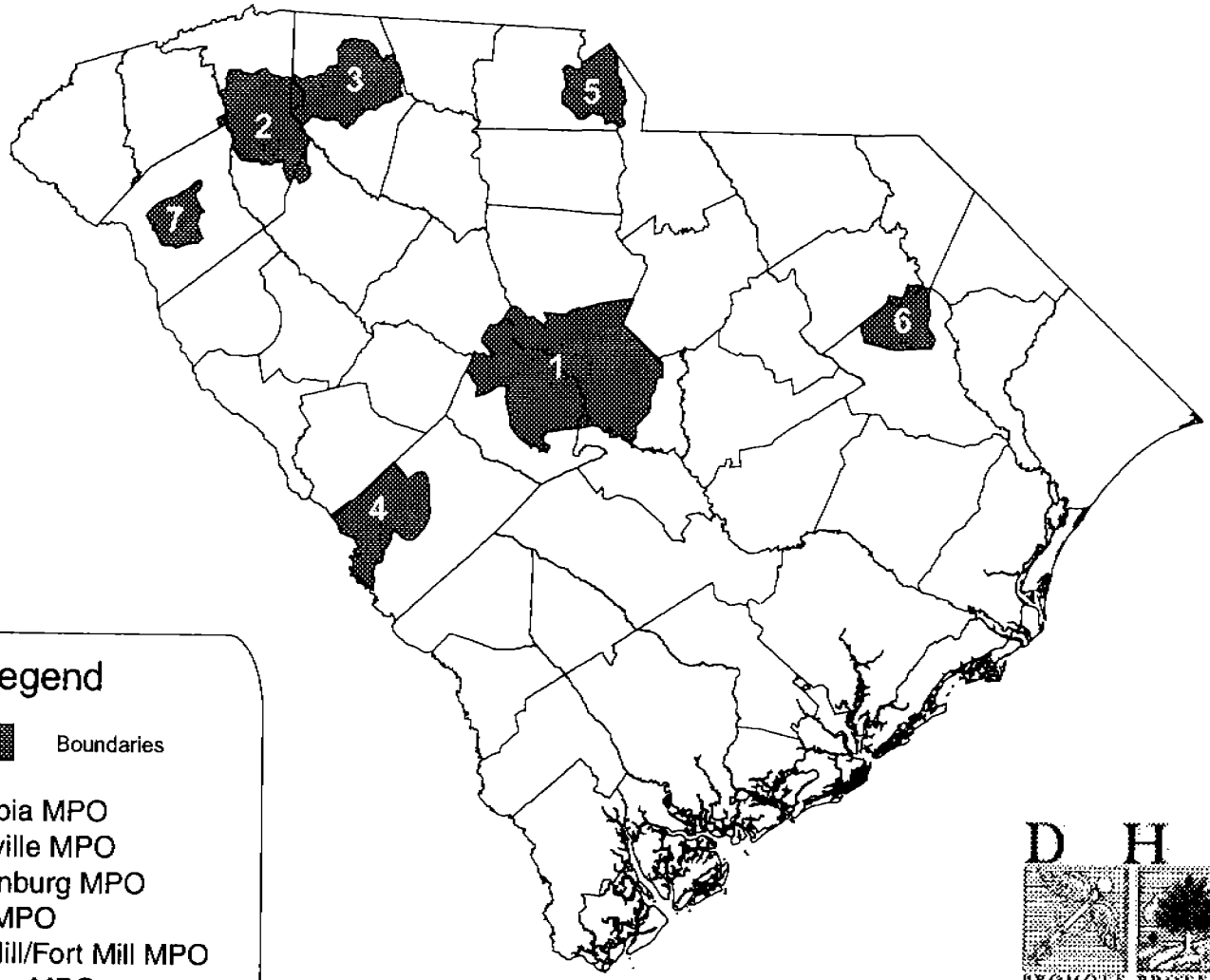
The Department is involved in the oxides of nitrogen (NOx) State Implementation Plan (SIP) Call and plans to participate fully, as appropriate, once the courts have fully resolved this matter. Additionally, the Department has the authority to require controls on any source that impacts the ambient air quality. Once litigation of the remanded 8-hour ozone standard is resolved, South Carolina will pursue any necessary additional controls on industry and transportation.

The health of our citizens is a primary concern and even though South Carolina is in attainment with the 1-hour ozone standard we continue to seek proactive measures to meet our commitment to public health and environmental protection. An example of these measures is our "Spare the Air" campaign which forecasts ozone levels based on the 8-hour ozone standard and assures public awareness by providing local air quality advisories through our state-wide voluntary ozone awareness network. The advisories are available daily through various media (i.e., newspapers, television, Internet, etc.). By providing these forecasts we hope to raise awareness and influence our citizens' behaviors in a way that will result in ground-level ozone reductions.

Funds have been made available through a supplemental environmental project for the Rock Hill/Fort Mill MPO area to create stations for ethanol distribution. This initiative, funded from an EPA enforcement action, is the result of creative foresight by the Department, the South Carolina Energy Office, and the Catawba Regional Council of Governments. These stations will create greater access to ethanol for the growing fleet of flexible fuel vehicles in York, Lancaster, Chester, and Cherokee counties. This project will provide air quality benefits for both South Carolina and North Carolina.

Additional data and appendices to support the MPO boundaries as the recommended non-attainment areas are provided in the following sections. The criteria for the data is specific to the individual MPO and is consistent with the limited guidance provided by EPA.

Proposed Boundary Recommendations for the Remanded 8-hr Ozone Standard



Legend

Boundaries

1 Columbia MPO
2 Greenville MPO
3 Spartanburg MPO
4 Aiken MPO
5 Rock Hill/Fort Mill MPO
6 Florence MPO
7 Anderson MPO

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South Carolina Department of Health and Environmental Control

Map 1

Metropolitan Planning Organizations

As a condition for spending federal highway or transit funds in urbanized areas, the federal highway and transit statutes require the designation of MPOs which have responsibility for planning, programming, and coordination of federal highway and transit investments.

Metropolitan areas are the nation's economic engines. Almost three-quarters of US citizens live and work in these regions, which drive the nation's economy. The quality of metropolitan transportation infrastructure – highways, bridges, airports, transit systems, rails, and ports – is therefore, a primary factor in American economic competitiveness.[1]

Metropolitan Planning Organizations are designated for each urbanized area with a population exceeding 50,000 as measured in the latest decennial census. The area covered by each MPO includes the current urbanized areas and all contiguous areas likely to be urbanized within 20 years.[2] Geographical boundaries for the MPO are established by the MPO itself in agreement with the Governor of each state. These boundaries are defined by a distinct geographical area and are updated and reviewed every five years. The MPO boundaries used in this recommendation are based on population projections for the year 2015.

Metropolitan Planning Organizations are required to develop a unified planning work program. This document describes planning activities, discusses planning priorities facing the area, and describes all metropolitan transportation and transportation related air quality planning activities.

States and MPOs annually certify to the Federal Highway Administration that their metropolitan transportation planning process is addressing the major issues facing their area and is being conducted in accordance with applicable federal requirements. Map 1 illustrates the MPO borders being proposed as non-attainment ozone boundary areas.

In South Carolina, the MPOs are commonly known by the technical committee responsible for the development of infrastructure improvements within the MPO boundaries. These names are as follows:

- Columbia MPO, Columbia Area Transportation Study (COATS)
- Greenville MPO, Greenville Area Transportation Study (GRATS)
- Spartanburg MPO, Spartanburg Area Transportation Study (SPATS)
- Aiken MPO, Augusta Regional Transportation Study (ARTS)
- Rock Hill/Fort Mill MPO, Rock Hill/Fort Mill Area Transportation Study (RFATS)
- Florence MPO, Florence Area Transportation Study (FLATS)
- Anderson MPO, Anderson Area Transportation Study (ANATS)

1. Association of Metropolitan Planning Organizations
2. Travel Model Improvement Program

Columbia MPO

The Columbia MPO includes that portion of Lexington, Richland, and Calhoun counties distinctly defined and known as the Columbia Area Transportation Study. The city of Columbia is included within the MPO boundary.

The ambient air quality impacts from the area are measured by three monitors that account for predominant meteorological patterns in that area. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern.

The topography of the MPO area is divided between gentle rolling hills and flat terrain with no barriers to ambient air transport.

Both Lexington and Richland counties are a mix of rural and heavily urbanized land use. The MPO portion of each county contains the majority of the urbanized area for the MPO. The combined counties comprise 1,531.2 sq. miles with a total population of 516,251. Similar data from the MPO (1,001.7 sq. mi. with a population of 461,121), yields a MPO population density of 460.3 persons/sq. mi. compared to a non-MPO population density of 104.1 persons/sq. mi. for both counties.

Population projections between 1999 and 2015 estimate that the MPO area will grow by about 26%. The expected growth rate for all three counties combined is only 16%. This supports the fact that the MPO area is the most urbanized part of the county and encompasses the majority of the foreseeable population.

Over 91% of the daily vehicle miles traveled in Lexington and Richland counties occur within the MPO boundary.

All eight of the stationary sources of NOx emissions in Lexington County are located within the MPO. They account for 5,094.6 tons of NOx emitted annually. In addition, 4,912.05 tons, or 96%, of the NOx is emitted from one facility. That facility is subject to potential impacts of the NOx SIP Call.

Of the 13 stationary sources of NOx emissions in Richland County, 10 are located within the MPO. Although they only account for a fraction of the 20,030.7 tons of NOx emitted annually from the whole county, 19,895.18 tons, or 99%, of NOx is emitted from two facilities . Both facilities are subject to potential impacts of the NOx SIP Call.

There are no significant emissions of NOx from stationary sources in the Calhoun County portion of the MPO.

All ten of the stationary sources of VOC emissions in Lexington County are located within the MPO. They account for 628.6 tons of VOC emitted annually.

Of the 12 stationary sources of VOC emissions in Richland County, 9 are located within the MPO.

They account for over 81% of the 2,343.1 tons of VOC emitted annually from the county as a whole.

There are no significant emissions of VOC from stationary sources in the Calhoun County portion of the MPO.

Additional data and various maps supporting our recommendation of the Columbia MPO can be found in the appendices.

Greenville MPO

The Greenville MPO includes that portion of Greenville, Laurens, Pickens, and Spartanburg counties distinctly defined and known as the Greenville Area Transportation Study. The city of Greenville is included within the MPO boundary.

The ambient air quality impacts from the area are measured by two monitors that account for predominant meteorological patterns in that area. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern.

The topography of the MPO area is rolling hills with no barriers to ambient air transport.

Greenville County has a mixed land use pattern that is predominantly rural in the northern and southern portions of the county. The exception is the MPO area which is mostly urban and takes up about half of the whole county. The MPO stretches across the central part of the county. The county as a whole is 797 sq. miles in size with a total population of 358,936. Similar data from the MPO (358 sq. mi. with a population of 350,642), yields a MPO population density of 979.5 persons/sq. mi. compared to a non-MPO population density of 18.9 persons/sq. mi. in Greenville County. One of the reasons the MPO population is so close to the county population is because of the densely populated portions of the other counties included in the Greenville MPO.

Population projections between 1999 and 2015 estimate that both the MPO area and the county as a whole will grow by about 15.23%.

Over 88% of the daily vehicle miles traveled in Greenville County occur within the MPO boundary. The VMT from the Spartanburg County portion of the MPO is included with the Spartanburg MPO.

Of the 23 stationary sources of NOx emissions in Greenville County, 21 are located within the MPO. They account for 96% of the 370.5 tons of NOx emitted annually from the whole county. There are no stationary sources of NOx in the Laurens and Pickens County portions of the MPO.

Of the 31 stationary sources of VOC emissions in Greenville County, 29 are located within the MPO. They account for over 97% of the 2,376.1 tons of VOC emitted annually from the county as a whole. There are no stationary sources of VOC in the Laurens and Pickens County portions of the MPO.

Additional data and various maps supporting our recommendation of the Greenville MPO can be found in the appendices.

Spartanburg MPO

The Spartanburg MPO includes that portion of Spartanburg County distinctly defined and known as the Spartanburg Area Transportation Study. The city of Spartanburg is included within the MPO boundary.

The ambient air quality impacts from the area are measured by two monitors that account for predominant meteorological patterns in that area. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern.

The topography of the MPO area is rolling hills with no barriers to ambient air transport.

Spartanburg County has a mixed land use pattern that is predominantly rural in the northern and southern portions of the county. The exception is the MPO area which is mostly urban and takes up less than half of the whole county. The MPO stretches across the central part of the county. The county as a whole is 819.2 sq. miles in size with a total population of 249,636. Similar data from the MPO (324.7 sq. mi. with a population of 181,048), yields a MPO population density of 557.6 persons/sq. mi. compared to a non-MPO population density of 138.7 persons/sq. mi. in Spartanburg County.

Population projections between 1999 and 2015 estimate that the MPO area will grow by about 18.14%. The expected growth rate for Spartanburg County is 16.13%.

Over 77% of the daily vehicle miles traveled in Spartanburg County occur within the MPO boundary.

Of the 23 stationary sources of NOx emissions in Spartanburg County, 19 are located within the MPO. They account for 99% of the 4,346.8 tons of NOx emitted annually from the whole county. In addition, 3,821.9 tons, or 88%, of NOx are emitted from one facility. That facility is subject to potential impacts of the NOx SIP Call.

Of the 25 stationary sources of VOC emissions in Spartanburg County, 22 are located within the MPO. They account for over 86% of the 2,474.1 tons of VOC emitted annually from the county as a whole.

Additional data and various maps supporting our recommendation of the Spartanburg MPO can be found in the appendices.

Aiken MPO

The Aiken MPO includes that portion of Aiken and Edgefield counties distinctly defined and known as the South Carolina portion of the Augusta Regional Transportation Study. The cities of Aiken and North Augusta are included within the MPO boundary. The Aiken MPO is one of two South Carolina urbanized areas included in a MPO that borders with another state's urbanized area. While South Carolina is committed to working with the other states to assure mutual attainment of the remanded 8-hour ozone standard, we specifically request that should EPA proceed with non-attainment designation that EPA delineate South Carolina's boundaries independent from any adjacent state's non-attainment area. This will facilitate areas of non-attainment being re-designated as attainment as expeditiously as possible.

The ambient air quality impacts from the area are measured by three monitors that account for predominant meteorological patterns in that area. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern.

The topography of the MPO area is one of gentle rolling hills with no barriers to ambient air transport.

Aiken County has a mixed land use pattern that is mostly rural. The exception is the MPO area which is mostly urban. The MPO is located in the western portion of the county. The county as a whole is 1,080.5 sq. miles in size with a total population of 135,401. Similar data from the MPO (314.1 sq. mi. with a population of 119,012), yields a MPO population density of 378.9 persons/sq. mi. compared to a non-MPO population density of 21.4 persons/sq. mi. in Aiken County.

Population projections between 1999 and 2015 estimate that the MPO area will grow by about 39%. This is almost twice the expected growth rate for the whole county, it also supports the fact that the MPO area is the most urbanized part of the county and encompasses the majority of the foreseeable population.

Over 74% of the daily vehicle miles traveled in Aiken County occur within the MPO boundary.

Of the 13 stationary sources of NOx emissions in Aiken County, 12 are located within the MPO. That accounts for over 99% of the 5,266.6 tons of NOx emitted annually from the county as a whole. In addition, 3,753.77 tons, or 71%, of NOx are emitted from one facility. That facility is subject to potential impacts of the NOx SIP Call. There are no stationary sources of NOx in the Edgefield County portion of the MPO.

Of the 16 stationary sources of VOC emissions in Aiken County, 15 are located within the MPO. That accounts for over 99% of the 1,096 tons of VOC emitted annually from the county as a whole. There are no stationary sources of VOC in the Edgefield County portion of the MPO.

Additional data and various maps supporting our recommendation of the Aiken MPO can be found in the appendices.

Rock Hill/Fort Mill MPO

The Rock Hill/Fort Mill MPO includes that portion of York County distinctly defined and known as the Rock Hill/Fort Mill Transportation Area Study. The city of Rock Hill is included within the MPO boundary. The Rock Hill/Fort Mill MPO is one of two South Carolina urbanized areas included in a MPO that borders with another state's urbanized area. While South Carolina is committed to working with the other states to assure mutual attainment of the remanded 8-hour ozone standard, we specifically request that should EPA proceed with non-attainment designation that EPA delineate South Carolina's boundaries independent from any adjacent state's non-attainment area. This will facilitate areas of non-attainment being re-designated as attainment as expeditiously as possible.

The ambient air quality impacts from the area are measured by two monitors that account for south westerly meteorological patterns. The state of North Carolina operates monitors directly across the state line that provide data for conditions northeast of the MPO. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern.

The topography of the MPO area is predominantly flat with no barriers to ambient air transport.

The Catawba Indian lands are located within the MPO boundary and have representation on the MPO.

York County has a mixed land use pattern that is mostly rural. The exception is the MPO area which is mostly urban. The MPO is located in the northeast portion of the county. The county as a whole is 695.8 sq. miles in size with a total population of 158,180. Similar data from the MPO (175.3 sq. mi. with a population of 113,300), yields a MPO population density of 646.4 persons/sq. mi. compared to a non-MPO population density of 86.2 persons/sq. mi. in York County.

Population projections between 1999 and 2015 estimate that the MPO area and the county as a whole will grow by about 25%.

Over 69% of the daily vehicle miles traveled in York County occur within the MPO boundary.

Of the 10 stationary sources of NOx emissions in York County, 5 are located within the MPO. They account for 99% of the 4,944.2 tons of NOx emitted annually from the whole county. In addition, 4,799 tons, or 97%, of NOx are emitted from two facilities. Both facilities are subject to potential impacts of the NOx SIP Call.

Of the 10 stationary sources of VOC emissions in York County, 6 are located within the MPO. They account for over 95% of the 3,227.1 tons of VOC emitted annually from the county as a whole.

Additional data and various maps supporting our recommendation of the Rock Hill/Fort Mill MPO can be found in the appendices.

Florence MPO

The Florence MPO includes that portion of Florence and Darlington counties distinctly defined and known as the Florence Area Transportation Study. The city of Florence is included within the MPO boundary.

The ambient air quality impacts from the area are measured by two monitors that account for predominant meteorological patterns in that area. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern. The area's proximity to the Atlantic Ocean does occasionally make it subject to strong coastal winds. One of the two monitors is located in Williamsburg County, which is south of Florence County. That monitor has an ozone design value of 0.075 ppm during years 1997-1999. The other monitor is located in the MPO portion of Darlington County.

The topography of the MPO area is flat with no barriers to ambient air transport.

Florence County has a mixed land use pattern that is mostly rural. The exception is the MPO area which is mostly urban. The MPO is located in the northeast portion of the county. The county as a whole is 803.1 sq. miles in size with a total population of 125,229. Similar data from the MPO (171.2 sq. mi. with a population of 70,640), yields a MPO population density of 412.6 persons/sq. mi. compared to a non-MPO population density of 86.4 persons/sq. mi. in Florence County.

Population projections between 1999 and 2015 estimate that the MPO area will grow by about 11.5%. The expected growth rate for the Florence County is about 10.6%.

Almost 70% of the daily vehicle miles traveled in Florence County occur within the MPO boundary.

Of the 12 stationary sources of NOx emissions in Florence County, 6 are located within the MPO. Although they only account for a fraction of the 3,702 tons of NOx emitted annually from the whole county, 3,355.23 tons, or 91%, of NOx is emitted from one facility. That facility is subject to potential impacts of the NOx SIP Call. There are no stationary sources of NOx in the Darlington County portion of the MPO.

Of the 14 stationary sources of VOC emissions in Florence County, 8 are located within the MPO. They account for over 54% of the 1,368.9 tons of VOC emitted annually from the county as a whole. There are no stationary sources of VOC in the Darlington County portion of the MPO.

Additional data and various maps supporting our recommendation of the Florence MPO can be found in the appendices.

Anderson MPO

The Anderson MPO includes that portion of Anderson County distinctly defined and known as the Anderson Area Transportation Study. The city of Anderson is included within the MPO boundary.

The ambient air quality impacts from the area are measured by three monitors that account for predominant meteorological patterns in that area. The general flow of surface air is out of the southwest, but wind patterns during days of ozone standard exceedances do not indicate a consistent wind pattern.

The topography of the MPO area is one of rolling hills with no barriers to ambient air transport.

Anderson County has a mixed land use pattern that is mostly rural. The exception is the MPO area which is mostly urban. The MPO is located in the northeast portion of the county. The county as a whole is 757.5 sq. miles in size with a total population of 162,793. Similar data from the MPO (125.2 sq. mi. with a population of 76,572), yields a MPO population density of 611.7 persons/sq. mi. compared to a non-MPO population density of 136.4 persons/sq. mi. in Anderson County.

Population projections between 1999 and 2015 estimate that the MPO area will grow by about 8%.

Thirty-three percent of the daily vehicle miles traveled in Anderson County occur within the MPO boundary.

There are 12 stationary sources of NOx emissions in Anderson County. Of the 3,125.5 tons of NOx emitted annually from those sources, only 14.1% are emitted from sources inside the MPO area; however, 2,494.19 tons of NOx come from one facility. That facility is subject to potential impacts of the NOx SIP Call.

There are also 12 stationary sources of VOC emissions in Anderson County. Of the 760.3 tons of VOC's emitted annually from those sources, 56.2% are emitted from inside the MPO area. Anderson county is one of six counties in our state that is not currently subject to state VOC RACT requirements; however, we are considering revising that regulation to include all counties. In addition, all of South Carolina is subject to VOC LAER requirements.

Additional data and various maps supporting our recommendation of the Anderson MPO can be found in the appendices.

Appendix A

Emissions and Air Quality in Adjacent Areas

Table A-1 identifies Ozone Design Values for each of the twenty-one (21) monitors located statewide for the years 1997-1999. Additionally, information on the Land Use, Location Type, EPA Monitor ID, and Geographical Information System (GIS) coordinates for each monitor are provided.

South Carolina Air Quality Ozone Data

Table A-1

County	Site Address	Land Use	Location Type	Monitor ID	Latitude (Degrees)	Longitude (Degrees)	Ozone Design Values (1997-1999)
Abbeville	Due West	Agricultural	Rural	450010001 - 1	34.3253	-82.3861	.086
Aiken	Jackson Middle School	Residential	Suburban	450030003 - 2	33.3422	-81.7886	.089
Anderson	Powdersville	Agricultural	Suburban	450070003 - 1	34.7750	-82.4903	.095
Barnwell	Barnwell Cms (Road S-6-21)	Forest	Rural	450110001 - 2	33.3203	-81.4653	.088
Berkeley	Bushy Park Pump Station	Industrial	Rural	450150002 - 1	32.9872	-79.9367	.079
Charleston	U S Army Reserve #1	Industrial	Suburban	450190042 - 1	32.9100	-79.9653	.075
Charleston	Cape Romain Wildlife refuge	Forest	Rural	450190046 - 1	32.9408	-79.6569	.079
Cherokee	Cowpens National Battle Ground	Forest	Rural	450210002 - 1	35.1303	-81.8164	.093
Chester	Chester Airport	Commercial	Rural	450230002 - 1	34.7928	-81.2036	.092
Colleton	Ashton	Agricultural	Rural	450290002 - 2	33.0081	-80.9650	.082
Darlington	Pee Dee Exp. Station - Field	Agricultural	Rural	450310003 - 1	34.2856	-79.7447	.088
Edgefield	Trenton	Agricultural	Rural	450370001 - 1	33.7397	-81.8536	.085
Oconee	Round Mt. Fire Tower (Longcreek)	Forest	Rural	450730001 - 1	34.8050	-83.2375	.086
Pickens	Clemson Cms (Clemson U Campus)	Agricultural	Rural	450770002 - 1	34.6533	-82.8386	.090
Richland	Parklane - State Park Health Center	Residential	Suburban	450790007 - 1	34.0939	-80.9622	.093*
Richland	Sandhill #2	Agricultural	Rural	450791002 - 1	34.1306	-80.8758	.090
Richland	Congaree Swamp National Monument	Forest	Rural	450791006 - 2	33.8161	-80.8264	.075
Spartanburg	North Spartanburg Fire Station #2	Residential	Rural	450830009 - 1	34.9886	-82.0756	.094
Union	Delta	Forest	Rural	450870001 - 1	34.5392	-81.5603	.084
Williamsburg	Indiantown	Agricultural	Rural	450890001 - 2	33.7236	-79.5650	.075
York	York Cms (New)	Agricultural	Suburban	450910006 - 1	34.9356	-81.2283	.086

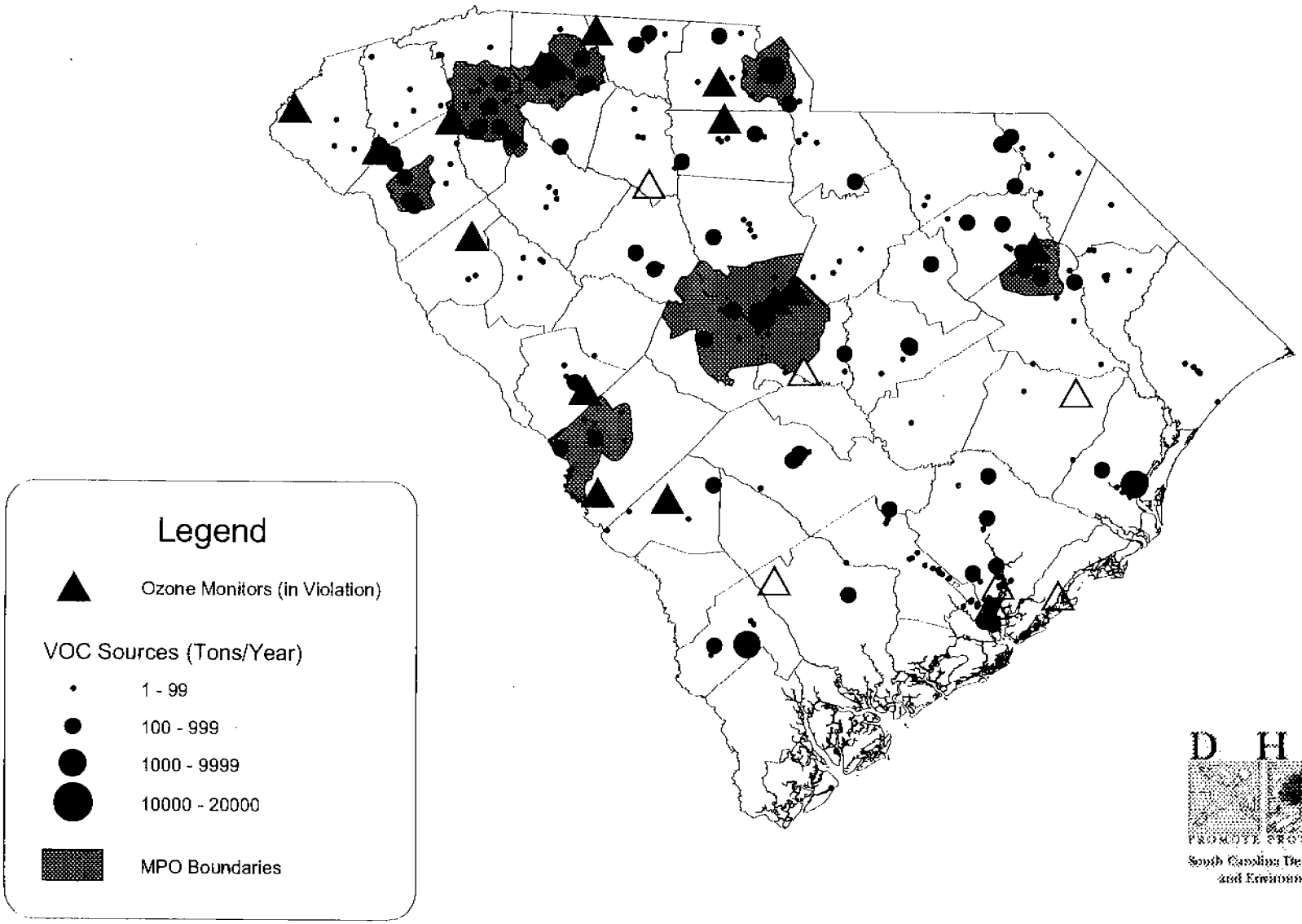
*Conservative approach by choosing highest ozone concentration in 1997 of co-located monitors.

Appendix B

Location of Emission Sources

Map B-1 illustrates where stationary sources of VOC are located in relation to the ozone monitors and MPO boundaries. Similarly, Map B-2 illustrates where stationary sources of NOx are located. Table B-1 lists both VOC and NOx emissions from the MPO's and their associated counties.

VOC Sources in South Carolina



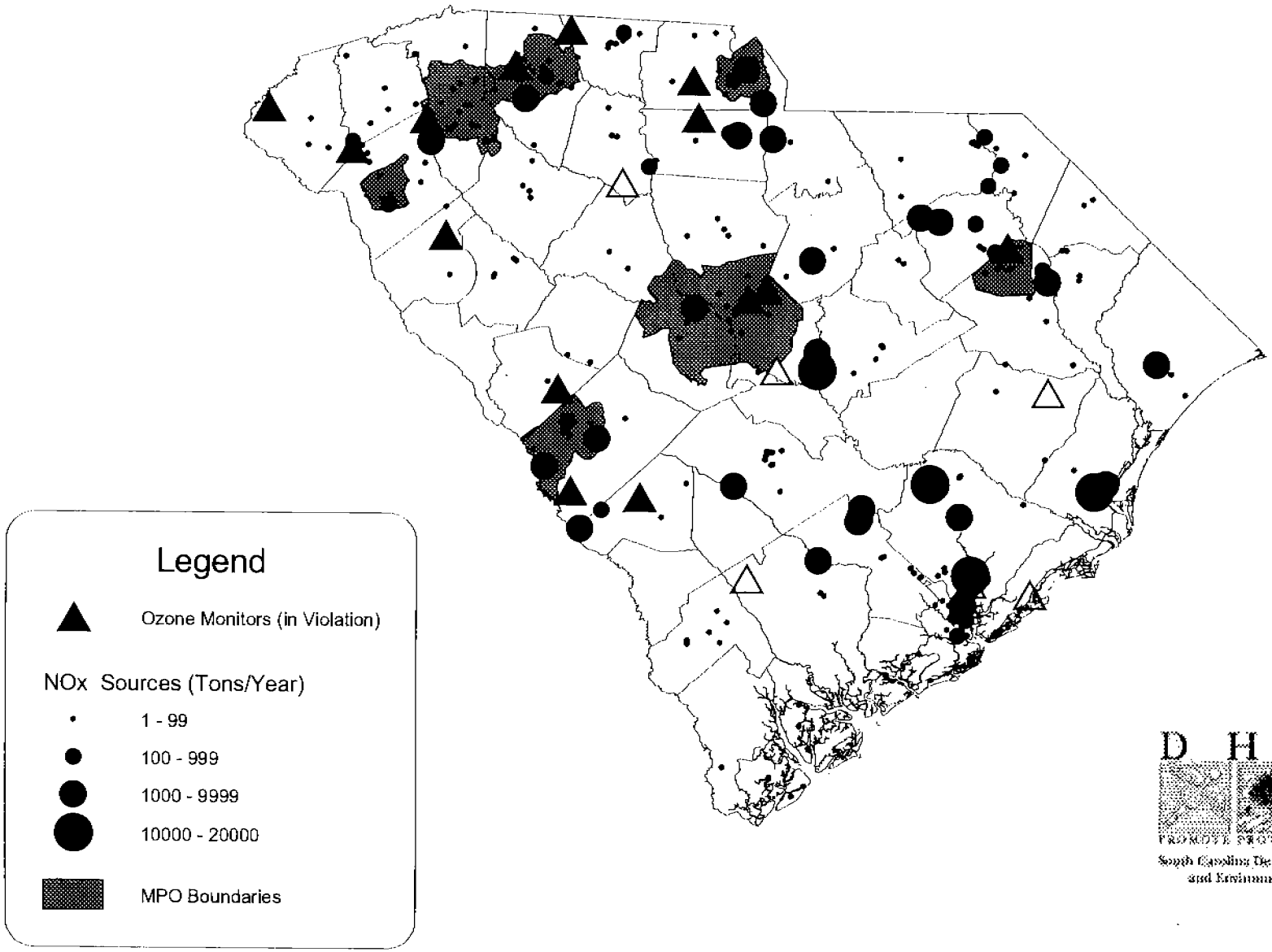
D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Map B-1

NOx Sources in South Carolina



D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Map B-2

NOx Source Analysis

MPO	County	Sources in County	Sources in MPO	% Sources in MPO	County Emissions	MPO Emissions	% Emission/per county from MPO
Aiken	Aiken	13	12	92.3%	5266.6	5262.7	99.9%
Anderson	Anderson	12	4	33.3%	3125.5	440.1	14.1%
Central Midlands	Richland	13	10	76.9%	20030.7	133.2	0.7%
	Lexington	8	8	100.0%	5094.6	5094.6	100.0%
Florence	Florence	12	6	50.0%	3702.0	11.4	0.3%
Greenville	Greenville	23	21	91.3%	370.5	355.8	96.0%
Spartanburg	Spartanburg	23	19	82.6%	4346.8	4324.0	99.5%
Rock Hill	York	10	5	50.0%	4944.2	4926.9	99.6%
					Total 46880.9		

VOC Source Analysis

MPO	County	Sources in County	Sources in MPO	% Sources in MPO	County Emissions	MPO Emissions	% Emission/per county from MPO
Aiken	Aiken	16	15	93.8%	1096.0	1095.8	100.0%
Anderson	Anderson	12	4	33.3%	760.3	427.0	56.2%
Central Midlands	Richland	12	9	75.0%	2343.1	1902.1	81.2%
	Lexington	10	10	100.0%	628.6	628.6	100.0%
Florence	Florence	14	8	57.1%	1368.9	740.9	54.1%
Greenville	Greenville	31	29	93.5%	2376.1	2305.7	97.0%
Spartanburg	Spartanburg	25	22	88.0%	2474.1	2136.0	86.3%
Rock Hill	York	10	6	60.0%	3227.1	3076.8	95.3%
					Total 14274.2		

Table B-1

Appendix C

Traffic and Commuting Patterns

This appendix contains data for each of the potential non-attainment boundaries in South Carolina using the percentages of county-wide Vehicle Miles of Travel (VMT) that occur within each MPO.

Table C-1 provides an estimate of 1999 daily VMT for each county, with detail for each functional class of road, from Interstate to Local. The daily VMT reported in this worksheet is consistent with the South Carolina Department of Transportation's estimates which are submitted to the United States Department of Transportation through the Highway Performance Management System (HPMS) reporting process. Additional detail is provided for the portion of county-wide 1999 Daily VMT that is estimated to occur within the MPO study area boundary in each county.

Table C-2 summarizes VMT data for each county. The worksheet also calculates, for comparison and information only, an indicator of daily VMT per capita for each MPO and County.

Table C-3 uses a slightly different method to project 2015 daily VMT. This worksheet incorporates VMT output from Travel Demand Forecasting Models (TDFMs) for each MPO. The TDFM output is used to estimate future VMT in the MPO areas. In the non-MPO portion of counties that contain an MPO, 2015 VMT is projected by calculating the non-MPO population and multiplying by the projected 2015 DVMT per capita for the county. The daily VMT data from the TDFM is added to the daily VMT calculated for the non-MPO area to arrive at a total projected daily VMT for the county. For counties that do not contain an MPO, the 2015 projected population is multiplied by the 2015 daily VMT per capita to arrive at the projected 2015 daily VMT.

1999 Average Daily VMT For Selected Counties in SC

From 1999 HPMS Report Data, MPO Study Area Share Calculated from Universal Traffic Count Data

U:\AirData\ReportData\MPO-v-RuralVMT.xls

	Aiken	Anderson	Darlington	Edgefield	Florence	Greenville	Lexington	Pickens	Richland	Spartanburg	York	Total
County Total												
Rural Interstate (01)	727,382	1,572,123	328,743	-	921,689	610,703	1,291,854	-	688,411	2,288,510	627,317	9,056,732
Rural Principal Arterial (02)	221,982	286,824	460,337	206,015	649,757	485,984	507,609	306,313	421,898	135,840	194,624	3,877,183
Rural Minor Arterial (03)	589,542	699,986	220,492	149,012	353,836	532,128	651,792	467,766	449,854	957,126	866,872	5,938,406
Rural Major Collector (04)	520,732	971,451	429,080	137,375	590,976	942,809	712,694	469,241	526,058	1,108,803	502,506	6,911,725
Rural Minor Collector (05)	50,165	65,678	26,974	9,541	75,955	49,147	67,852	49,500	41,903	167,805	83,252	687,772
Rural Local (09)	260,970	305,744	247,194	93,514	271,229	284,794	379,478	210,928	167,425	265,695	238,381	2,725,350
Rural Subtotal	2,370,772	3,901,808	1,712,820	595,458	2,863,442	2,905,566	3,611,279	1,503,748	2,295,548	4,923,779	2,512,951	29,197,167
Urban Interstate (11)	265,815	-	26,271	-	78,906	1,568,575	1,233,552	-	2,670,080	494,491	519,281	6,856,971
Urban Freeway/Expressway (12)	13,041	-	-	-	35,274	47,637	39,560	42,916	270,677	155,659	30,687	635,651
Urban Principal Arterial (13)	612,873	623,346	14,823	-	449,834	1,748,411	606,884	294,198	1,280,637	893,210	712,618	7,236,834
Urban Minor Arterial (14)	715,031	326,618	178,212	6,181	434,003	1,744,561	683,769	240,950	1,348,831	664,931	357,019	6,700,105
Urban Collector (15)	165,736	192,860	41,563	2,205	199,651	1,000,836	334,195	106,373	575,002	589,241	212,472	3,420,134
Urban Local (18)	146,566	75,831	54,798	64	86,038	256,486	265,534	50,566	302,856	104,811	68,353	1,411,899
Urban Area Subtotal	1,919,063	1,218,654	315,664	8,450	1,283,705	6,366,506	3,163,494	735,003	6,448,083	2,902,543	1,900,429	26,261,594
County Grand Total	4,289,835	5,120,462	2,028,484	603,907	4,147,147	9,272,071	6,774,773	2,238,750	8,743,631	7,826,322	4,413,380	55,458,761
MPO Study Area												
Rural Interstate (01)	446,526	-	-	-	921,689	610,703	1,033,549	-	688,411	1,703,971	532,338	5,937,187
Rural Principal Arterial (02)	129,217	-	-	-	296,356	153,116	428,238	16,097	220,550	101,360	82,963	1,427,898
Rural Minor Arterial (03)	267,999	190,156	-	-	140,246	277,909	428,290	-	370,136	509,785	259,377	2,443,899
Rural Major Collector (04)	269,120	229,659	-	23,631	247,076	583,698	511,897	18,295	475,784	552,611	226,745	3,138,517
Rural Minor Collector (05)	24,014	43,329	-	-	1,540	25,957	1,426	-	39,181	111,028	30,047	276,522
Rural Local (09)	140,624	39,377	-	4,402	168,134	179,452	282,207	5,611	141,143	169,907	118,581	1,249,441
Subtotal MPO Rural	1,277,500	502,522	-	28,033	1,775,041	1,830,837	2,685,607	40,004	1,935,205	3,148,662	1,250,052	14,473,463
Urban Interstate (11)	265,815	-	-	-	-	1,568,575	1,233,552	-	2,670,080	494,491	519,281	6,751,794
Urban Freeway/Expressway (12)	-	-	-	-	35,274	47,637	39,560	-	258,546	155,859	30,687	567,563
Urban Principal Arterial (13)	612,873	623,346	-	-	400,007	1,748,411	606,884	-	1,295,307	893,210	671,591	6,851,629
Urban Minor Arterial (14)	715,031	299,923	-	-	418,803	1,744,561	683,769	-	1,348,831	664,931	315,456	6,191,305
Urban Collector (15)	165,736	191,512	-	2,205	194,271	996,061	298,184	-	575,002	589,241	197,503	3,209,715
Urban Local (18)	145,488	73,970	-	17	75,311	256,285	262,234	-	302,981	104,811	64,713	1,285,810
Subtotal MPO Urban	1,904,943	1,188,751	-	2,222	1,123,666	6,361,530	3,124,183	-	6,450,747	2,902,543	1,799,231	24,857,816
Total MPO	3,182,444	1,691,272	-	30,255	2,898,707	8,192,367	5,809,791	40,004	8,385,952	6,051,205	3,049,283	39,331,279
Pct. of County VMT within MPO	74.2%	33.0%	0.0%	5.0%	69.9%	88.4%	85.8%	1.8%	95.9%	77.3%	69.1%	64.3%
Percent of VMT within MPO Study Area Boundary												
Rural Interstate (01)	61.4%	0.0%	0.0%	0	100.0%	100.0%	80.0%	0	100.0%	74.5%	84.9%	57.0%
Rural Principal Arterial (02)	58.2%	0.0%	0.0%	0.0%	45.6%	31.5%	84.4%	5.3%	52.3%	74.6%	42.6%	30.0%
Rural Minor Arterial (03)	45.5%	27.2%	0.0%	0.0%	39.6%	52.2%	65.7%	0.0%	82.3%	53.3%	29.9%	31.5%
Rural Major Collector (04)	51.7%	23.6%	0.0%	17.2%	41.8%	61.9%	71.8%	3.9%	90.4%	49.8%	45.1%	41.6%
Rural Minor Collector (05)	47.9%	66.0%	0.0%	0.0%	2.0%	52.8%	2.1%	0.0%	93.5%	66.2%	36.1%	35.1%
Rural Local (09)	53.9%	12.9%	0.0%	4.7%	62.0%	63.0%	74.4%	2.7%	84.3%	63.9%	49.7%	50.0%
Subtotal MPO Rural	53.9%	12.9%	0.0%	4.7%	62.0%	63.0%	74.4%	2.7%	84.3%	63.9%	49.7%	49.6%
Urban Interstate (11)	100.0%	0	0	0	0	100.0%	100.0%	0	100.0%	100.0%	100.0%	100.0%
Urban Freeway/Expressway (12)	0	0	0	0	100.0%	100.0%	100.0%	0.0%	95.5%	100.0%	100.0%	90.9%
Urban Principal Arterial (13)	100.0%	100.0%	0.0%	0	88.9%	100.0%	100.0%	0.0%	101.1%	100.0%	94.2%	93.8%
Urban Minor Arterial (14)	100.0%	91.8%	0.0%	0	96.5%	100.0%	100.0%	0.0%	100.0%	100.0%	88.4%	88.1%
Urban Collector (15)	100.0%	99.3%	0.0%	100.0%	97.3%	99.5%	89.2%	0.0%	100.0%	100.0%	93.0%	91.1%
Urban Local (18)	99.3%	97.5%	0.0%	26.3%	87.5%	99.9%	98.8%	0.0%	100.0%	100.0%	94.7%	94.9%
Subtotal MPO Urban	99.3%	97.5%	0.0%	26.3%	87.5%	99.9%	98.8%	0.0%	100.0%	100.0%	94.7%	93.1%

Table C-1

1999 Average Daily VMT For Selected Counties in SC

Summary By Urbanized Area and MPO Boundary

U:\AirData\ReportData\MPO-v-RuralVMT.xls

	Aiken	Anderson	Darlington	Edgefield	Florence	Greenville	Lexington	Pickens	Richland	Spartanburg	York	Total
Rural Subtotal	2,370,772	3,901,808	1,712,820	595,458	2,863,442	2,905,566	3,611,279	1,503,748	2,295,548	4,923,779	2,512,951	29,197,167
Urban Area Subtotal	1,919,063	1,218,654	315,664	8,450	1,283,705	6,366,506	3,163,494	735,003	6,448,083	2,902,543	1,900,429	26,261,594
County Grand Total	4,289,835	5,120,462	2,028,484	603,907	4,147,147	9,272,071	6,774,773	2,238,750	8,743,631	7,826,322	4,413,380	55,458,761
Subtotal MPO Rural	1,277,500	502,522	-	28,033	1,775,041	1,830,837	2,685,607	40,004	1,935,205	3,148,662	1,250,052	14,473,463
Subtotal MPO Urban	1,904,943	1,188,751	-	2,222	1,123,666	6,361,530	3,124,183	-	6,450,747	2,902,543	1,799,231	24,857,816
Total MPO	3,182,444	1,691,272	-	30,255	2,898,707	8,192,367	5,809,791	40,004	8,385,952	6,051,205	3,049,283	39,331,279
Subtotal, Rural Outside MPO	1,093,272	3,399,286	1,712,820	567,424	1,088,400	1,074,729	925,672	1,463,744	360,343	1,775,117	1,262,899	14,723,705
Subtotal Urban Outside MPO	14,119	29,903	315,664	6,228	160,039	4,976	39,311	735,003	(2,664)	-	101,198	1,403,778
Total Outside MPO	1,107,391	3,429,189	2,028,484	573,652	1,248,439	1,079,705	964,983	2,198,747	357,679	1,775,117	1,364,097	16,127,482
Percent of VMT within MPO Area	74%	33%	0%	5%	70%	88%	86%	2%	96%	77%	69%	71%
County Population [1]	135,401	162,793	66,488	19,989	125,229	358,936	208,972	108,126	307,279	249,636	158,180	1,901,029
MPO Population	85,525	76,572	-	-	70,640	360,151	177,740	-	283,381	181,048	113,300	1,348,357
County Total VMT/Capita	31.7	31.5	30.5	30.2	33.1	25.8	32.4	20.7	28.5	31.4	27.9	29.2
MPO VMT/Capita	37.2	22.1	-	-	41.0	22.7	32.7	-	29.6	33.4	26.9	29.2
Rural VMT/Capita	22.2	39.8	30.5	28.7	22.9	(888.7)	30.9	20.3	15.0	25.9	30.4	29.2

[1] County population from Census 1999 estimates, except in Greenville and York, where local planning department estimates are used

Table C-2

2015 Projected Average Daily VMT For Selected Counties in SC

From Travel Demand Forecasting Models (TDFMs) for MPOs, VMT Trend and Population Projections for non-MPO Areas

U:\AirData\ReportData\MPO-v-RuralVMT.xls

	Aiken	Anderson	Darlington	Edgefield	Florence	Greenville	Pickens	Lexington Richland	Spartanburg	York	Total
County Grand Totals											
Estimated using TDFMs for MPO areas	5,502,111	6,065,243	2,663,095	898,911	5,949,756	14,130,135	3,204,316	25,466,194	12,356,299	6,377,411	82,613,470
*Estimated by 2015 Pop*2015 VMT/capita*	5,865,372	7,339,396	2,663,095	898,911	5,442,451	13,020,715	3,204,316	22,140,971	11,378,193	6,717,999	78,671,419
County Outside of MPO Boundary	1,657,719	4,039,425	2,663,095	898,911	2,347,524	(44,074)	3,204,316	2,248,512	2,983,175	1,924,154	21,922,755
MPO Study Area											
Interstate (01,11)					1,198,259	3,196,977		9,186,416		1,379,451	14,961,103
Other Urban Freeway/Expressway (12)					55,869	548,180		764,393		164,127	1,532,570
Principal Arterial (02, 13)		1,183,072			850,072	3,534,393		6,858,081		1,458,859	13,884,477
Minor Arterial (03, 14)		301,177			712,926	2,732,578		2,460,509		599,087	6,806,278
Collector (04, 05, 15)		374,013			513,813	2,711,629		2,563,320		501,950	6,664,724
Local (09, 18)		167,556			271,293	1,450,452		1,384,963		349,782	3,624,046
Total MPO Area	3,844,392	2,025,818			3,602,232	14,174,209		23,217,683	9,373,124	4,453,256	47,473,198
Pct. of County VMT within MPO	69.9%	33.4%	0.0%	0.0%	60.5%	100.3%	0.0%	91.2%	75.9%	69.8%	57.5%

Note: Travel Demand Model data for Aiken County portion of the Aiken MPO is not yet available. VMT for the Aiken County MPO study area is estimated based on projected traffic growth rates derived from the TDFM for the entire Augusta-Aiken MP(

Table C-3

Appendix D

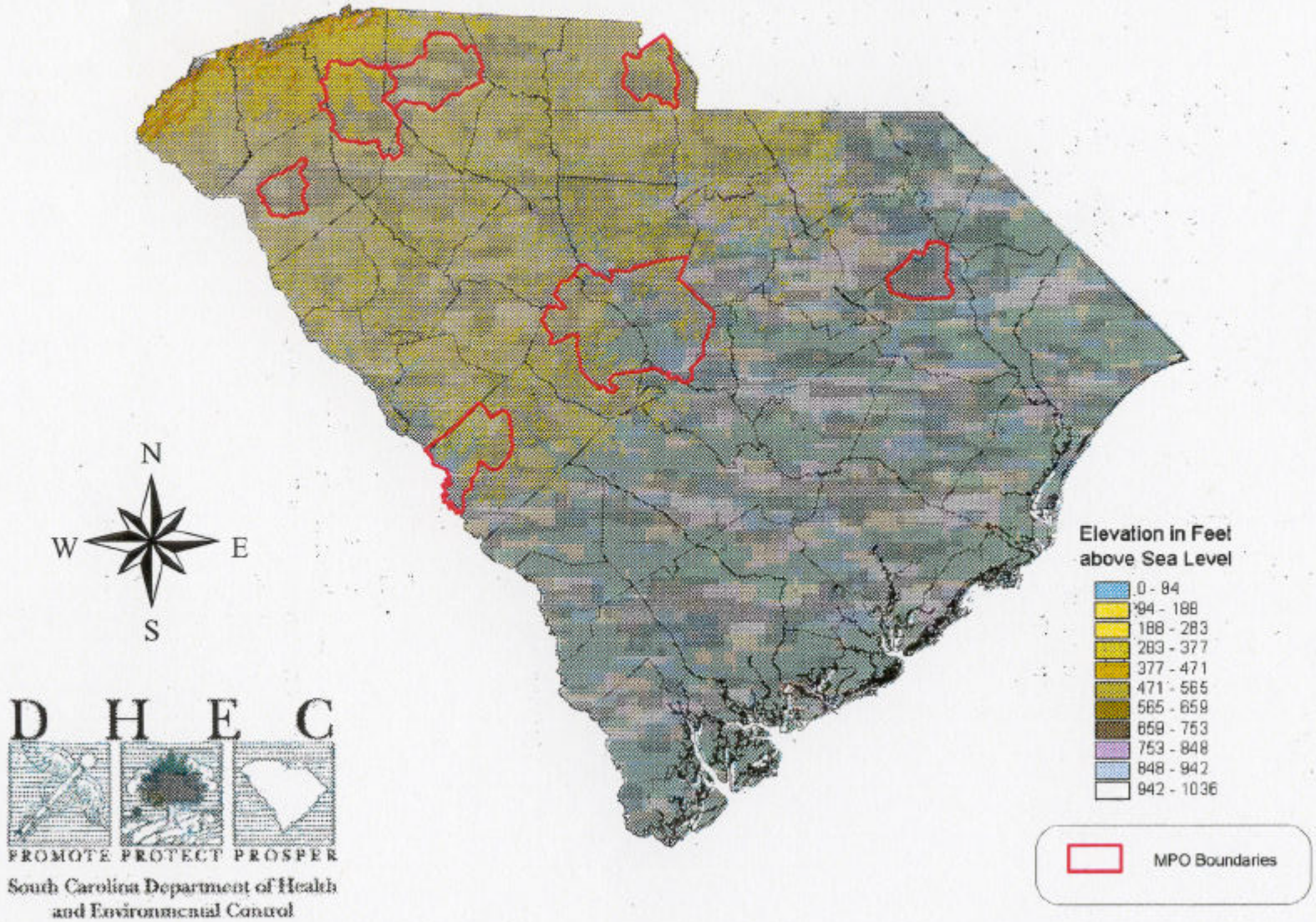
Geography/Topography

As Map D-1 illustrates, South Carolina has few significant topographic features that affect or influence urban scale air pollution transport within the state. The topography divides South Carolina into two distinct regions, commonly known as the Piedmont and the Coastal Plain. The Piedmont consists mainly of rolling hills of relatively minor variation in elevation, in the range of 200-600 feet. The coastal plain is virtually flat, the majority of which is less than 60 feet above mean sea level. The lack of topographically defined airsheds is conducive to free air movement and the effective dispersion of pollutants. All of South Carolina's rivers generally flow southeast towards the Atlantic Ocean. The only significant barrier to air movement occurs in the northwest corner of the state at the southeastern edge of the Appalachian mountains, where elevation increases to over 2000 feet, with isolated peaks of over 3000 feet.

In addition to the topography, boundaries have been added to the maps to indicate the MPO's for non-attainment ozone boundaries.

Map D-2 illustrates the land use patterns in South Carolina.

South Carolina Topography and Metropolitan Planning Organizations



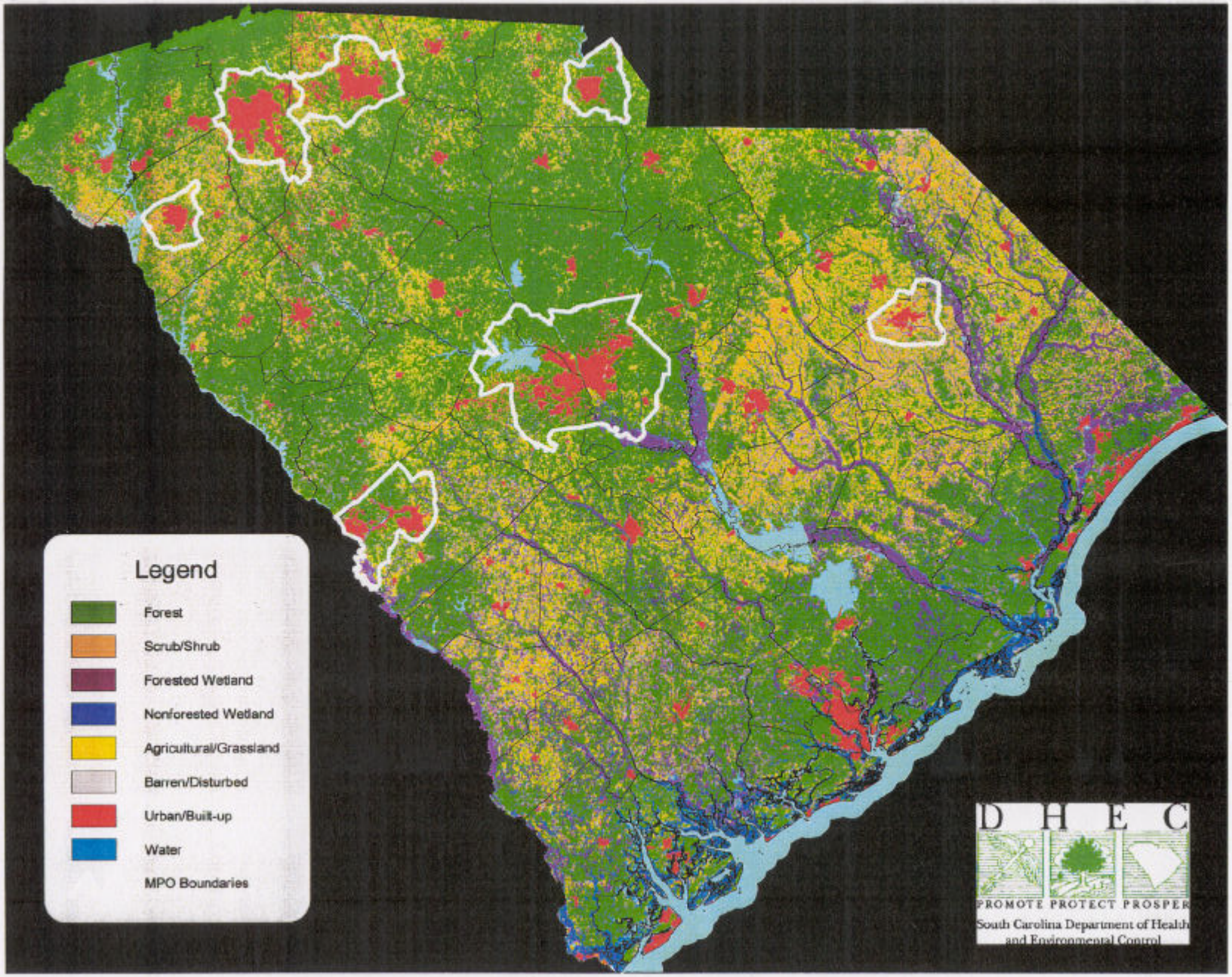
D H E C

FROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Map D-1

South Carolina Land Use



Map D-2

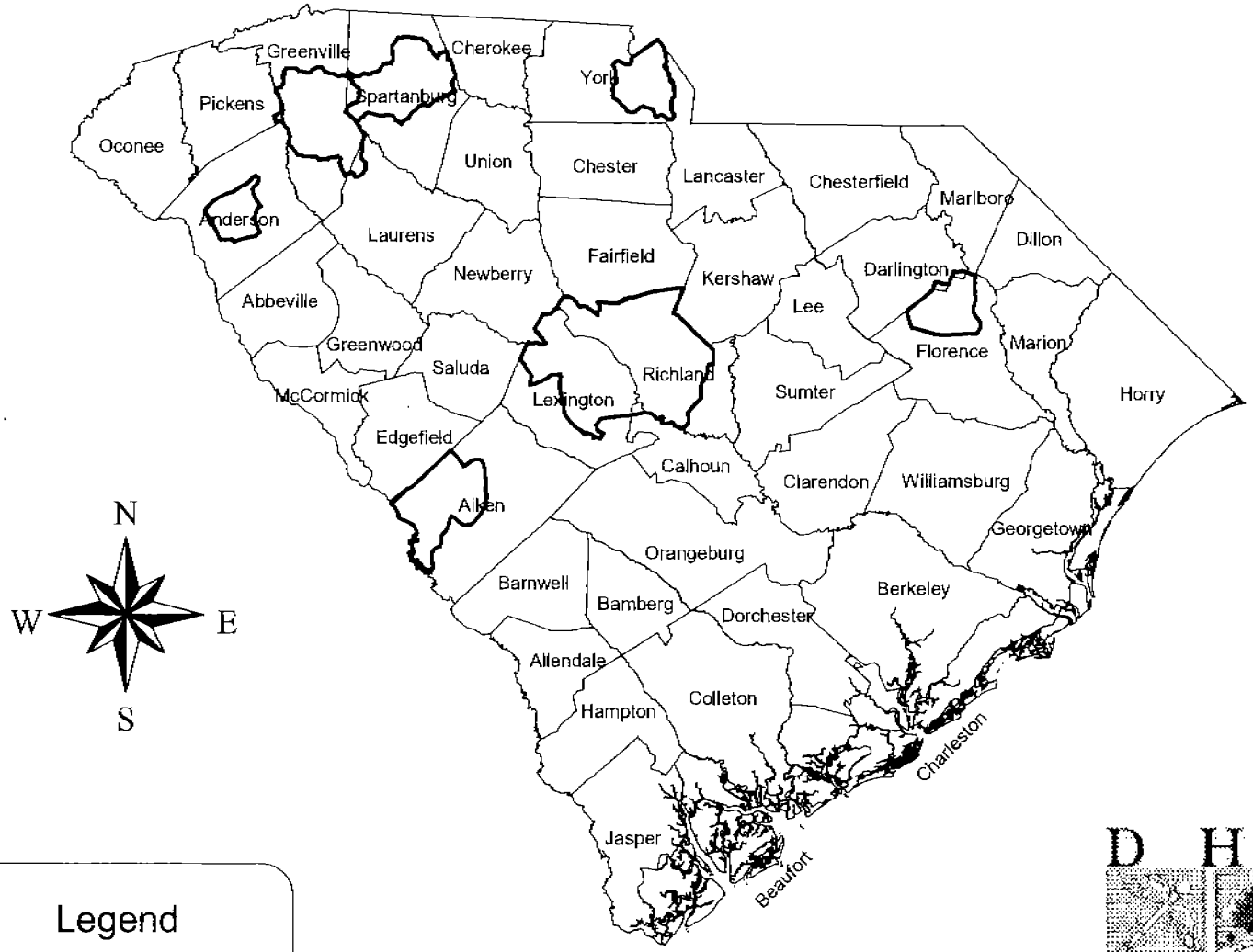
Appendix E

Jurisdictional Boundaries and Tribal Lands

Map E-1 illustrates the jurisdictional boundaries by county. Map E-2 details the Catawba Indian lands, which are a part of the Rock Hill/Fort Mill MPO.

There are no 1-hour non-attainment areas in South Carolina.

South Carolina Counties



Legend

MPO Boundaries

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Map E-1

Appendix F

EPA Correspondence

This appendix contains both a letter requesting information from EPA and their letter back denying that request.

D H E C
PROMOTE PROTECT PROSPER
Bull Street
Columbia, SC 29201-1708

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May 1, 2000

Mr. Winston A. Smith, Director
Air, Pesticides & Toxics Management Division
U.S. EPA Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960

Dear Mr. Smith:

We are currently in the process of determining what areas of the State to propose for designation under the potential 8-hour ozone standard. This letter is to request your assistance so that we can make an informed decision as to what areas should be included in our pending proposal. I recently learned of an analysis performed by OAQPS for three Georgia cities that predicted future 8-hour design values for 2007 using the implementation of EPA's Tier 2 controls and the NOx SIP call. An analysis of this type for areas in South Carolina would provide significant assistance to us as we map out geographic boundaries of potential 8-hour ozone nonattainment areas. Staff has discussed the possibilities of such an analysis with EPA Region 4 personnel in the past but to date no commitments have been made.

Therefore, with your assistance, we request that such an analysis be performed for the following counties in South Carolina: Oconee, Pickens, Anderson, Greenville, Spartanburg, Abbeville, Cherokee, York, Chester, Darlington, Florence, Edgefield, Aiken, Barnwell, Lexington, and Richland. We also request that the analysis be performed in such a manner that we can determine impacts on predicted future year design values from the Tier 2 controls and NOx SIP call individually as well collectively.

Our staff contact regarding this request is John Hursey (803) 898-4286. Thank you in advance for your assistance in this matter.

Sincerely,

William G. Galandi

for James A. Joy, III, Chief
Bureau of Air Quality

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

RECEIVED

4APT-APB

MAY 10 2000

Bureau of Air Quality

James A. Joy, III, P.E., Chief
Bureau of Air Quality Control
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Mr. Joy:

Thank you for your May 1, 2000, letter requesting future 8-hour design values that reflect the individual impact of the nitrogen oxides state implementation plan (NOx SIP) Call and the Tier 2 regulation in the South Carolina counties of Oconee, Pickens, Anderson, Greenville, Spartanburg, Abbeville, Cherokee, York, Chester, Darlington, Florence, Edgefield, Aiken, Barnwell, Lexington, and Richland. The letter stated that this data is needed by your agency to define the geographic extent of potential 8-hour ozone nonattainment areas. It is unclear how the use of the data you are requesting will be used in determining boundaries for the 8-hour ozone standard. According to the Environmental Protection Agency (EPA) guidance for determining boundary designations (March 28, 2000), the designation of nonattainment areas is based on existing air quality, not future air quality. The data you requested would provide information for future control strategy assessments rather than current boundaries for areas failing to meet the 8-hour ozone standard.

Your letter stated that the Georgia Environmental Protection Division (EPD) was provided similar data. Region 4 provided the future design values for areas with potential 8-hour ozone problems in Georgia pursuant to a conference call with EPD and stakeholders from the Columbus area. These values were requested in order to determine the potential impacts of future national controls on the attainment status of those areas. The data were developed from existing 2007 modeling and estimates through contractor assistance for EPA's Office of Air Quality Planning and Standards.

At this time, EPA does not have the resources necessary to provide the future design values that you request. EPA is not currently developing or releasing future 8-hour design values due to deliberations on issues associated with petitions on the NOx SIP Call. As soon as this information is available, we will provide it to you. If there is a cost involved in filling such a request, we will let you know, prior to obtaining the information.

If questions arise, please do not hesitate to call Linda Anderson-Carnahan of the EPA Region 4 staff at (404) 562-9074.

Sincerely,

Winston A. Smith
Director
Air, Pesticides and Toxics
Management Division

cc: Region 4 State Air Directors