Western Piedmont Council of Governments
736 Fourth Street SW, Hickory, NC 28602
PO Box 9026, Hickory, NC 28603
828.322.9191 • Fax: 828.322.5991 • www.wpcog.org

Over 30 Years of Regional Leadership

December 20, 2007

Ms. Kay Prince
US Environmental Protection Agency
Region 4
61 Forsyth St. S.W.
Atlanta, GA 30303-8960

Dear Ms. Prince:

Attached is the December 2007 Progress Report – Final Report for the Unifour Early Action Compact submitted on behalf of the Unifour Air Quality Committee. From July 1, 2007 until present, the UAQC and local members of the Unifour EAC have continued to address ozone pollution in the Hickory-Morganton-Lenoir metropolitan area. Please see the attached report which details some of the emission reduction strategies that are being implemented throughout the region to help diminish ozone concentrations in the Unifour.

We look forward to continuing to work with the USEPA and the NC Division of Air Quality in efforts to improve the air quality in the Greater Hickory Metro Area. Thank you for all the support you provide in helping to make this process successful. If we can provide any additional information please contact me at 828-485-4248.

Sincerely,

Tony Gallegos, Water Quality Administrator WPCOG

cc: Kitty Barnes, Chair UAQC
Sheila Holman, NC DAQ
Doug Taylor, Executive Director WPCOG
John Tippett, Planning Director WPCOG

R. Douglas Taylor, Executive Director • Alden E. Starnes, Chairman • Nicky E. Setzer, Vice-Chairman • Kitty W. Barnes, Secretary • Bruce E. Meisner, Treasurer
Jack F. Roberts, Past Chairman • At-Large Members: Wayne F. Abele, Sr. • Carl W. Evans, Sr. • Granville W. Morrow • W. Darrell Robertson

Alexander County • Taylorsville • **Burke County** • Connelly Springs • Drexel • Glen Alpine • Hildebran • Morganton • Rutherford College • Valdese • **Caldwell County** • Cajah's Mountain
Cedar Rock • Gamewell • Granite Falls • Hudson • Lenoir • Rhodhiss • Sawmills • **Catawba County** • Brookford • Catawba • Claremont • Conover • Hickory • Long View • Maiden • Newton

An Equal Opportunity Affirmative Action Employer

Western Piedmont Council of Governments
736 Fourth Street SW, Hickory, NC 28602
PO Box 9026, Hickory, NC 28603
828.322.9191 • Fax: 828.322.5991 • www.wpcog.org

Over 30 Years of Regional Leadership

December 20, 2007

Ms. Kay Prince
US Environmental Protection Agency
Region 4
61 Forsyth St. S.W.
Atlanta, GA 30303-8960

Dear Ms. Prince:

During the past several years, staff at the Western Piedmont Council of Governments (WPCOG) has worked diligently with local governments and other stakeholders on air quality issues in the Unifour Area related to the formation of ground level ozone pollution and more recently PM 2.5 pollution. As part of the Early Action Compact (EAC) process, the Unifour Air Quality Committee (UAQC) was formed. It is made up of elected officials from the local members of the effected area and the group oversees actions taken relevant to air quality. Since the UAQC's inception I have served as chair, and continued to serve as chair.

Along with other stakeholders, the group was instrumental in the identification and implementation of the local control measures and in the promotion of outreach and educational initiatives to improve both air quality and air quality awareness throughout the region. On behalf of the UAQC I certify that all agreed upon local control measures as outlined in the EAC have been enacted.

We look forward to working with the USEPA and the NC Division of Air Quality to address air quality issues in the Greater Hickory Metro Area. Thank you for all the support you provide in helping to make this process successful.

Sincerely,

Kitty Barnes

Kitty Barnes, Chair UAQC

cc: Doug Taylor, Executive Director WPCOG
John Tippett, Planning Director WPCOG
Tony Gallegos, Water Quality Administrator WPCOG

R. Douglas Taylor, Executive Director • Alden E. Starnes, Chairman • Nicky E. Setzer, Vice-Chairman • Kitty W. Barnes, Secretary • Bruce E. Meisner, Treasurer
Jack F. Roberts, Past Chairman • At-Large Members: Wayne F. Abele, Sr. • Carl W. Evans, Sr. • Granville W. Morrow • W. Darrell Robertson

Alexander County • Taylorsville • **Burke County** • Connelly Springs • Drexel • Glen Alpine • Hildebran • Morganton • Rutherford College • Valdese • **Caldwell County** • Cajah's Mountain
Cedar Rock • Gamewell • Granite Falls • Hudson • Lenoir • Rhodhiss • Sawmills • **Catawba County** • Brookford • Catawba • Claremont • Conover • Hickory • Long View • Maiden • Newton

An Equal Opportunity Affirmative Action Employer

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Air Quality

Michael F. Easley, Governor

William G. Ross, Jr., Secretary
B. Keith Overcash, P.E., Director

December 19, 2007

James Palmer, Regional Administrator
USEPA Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Dear Mr. Palmer:

In accordance with the Early Action Compact (EAC) protocols, this letter is to fulfill the final EAC milestone. This letter certifies that the 2005 through 2007 ozone ambient monitoring data have been quality assured for those North Carolina areas whose designation status was deferred as part of the EAC process. Additionally, this letter certifies that all of North Carolina's EAC areas are meeting the 1997 8-hour ozone National Ambient Air Quality Standard.

In the demonstration submitted in December 2004 to support the EAC modeled attainment and maintenance of the 8-hour ozone standard, the following State control measures were modeled:

- The 1999 Clean Air Bill, which expanded the North Carolina's vehicle inspection and maintenance program from nine to 48 counties;
- The NOx SIP Call rule, which reduced summertime nitrogen oxide emissions from power plants and large industrial boilers;
- The North Carolina open burning rule, which bans open burning on air quality action days; and
- The first phase of the North Carolina Clean Smokestacks Act, which capped coal-fired utility emissions of both nitrogen oxides and sulfur dioxide. This includes implementing the controls at Marshall unit 4 before the 2007 ozone season, one year earlier than originally committed to.

All of these measures have been fully implemented in North Carolina. In addition to the modeled control measures, the local EAC areas committed to programs that will reduce emissions and which were directionally correct. These areas have worked hard in bringing air quality issues to the forefront. The implementation of these programs will be discussed in the EAC areas' respective annual reports, due by December 31, 2007.

The North Carolina Division of Air Quality believes that it has met all of the requirements of the EAC process and respectfully requests that you commence the federal process to designate the North Carolina EAC areas as attainment for the 8-hour ozone standard.

1641 Mail Service Center, Raleigh, North Carolina 27699-1641
2728 Capital Blvd., Raleigh, North Carolina 27604
Phone: 919-715-6232 / FAX 919-715-7175 / Internet: www.ncair.org

An Equal Opportunity/Affirmative Action Employer – 50% Recycled/10% Post Consumer Paper

One NorthCarolina Naturally

If you should have any questions or require additional information, please contact Laura Boothe of my staff at (919) 733-1488.

Sincerely,

B. Keith Overcash, P.E.

BKO:lab

cc: Laura Boothe, NCDAQ
Dick Schutt, USEPA
Jane Spann, USEPA
Nacosta Ward, USEPA

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Air Quality

Michael F. Easley, Governor

William G. Ross, Jr., Secretary
B. Keith Overcash, P.E., Director

December 21, 2007

Beverly Banister
Director of Air, Pesticides and Toxics Management Division
US Environmental Protection Agency
Sam Nunn Atlanta Federal Center
61 Forsyth Street S. W.
Atlanta GA 30303-8960

Subject: Region IV Air Planning Agreement FY 2007 Ambient Monitoring Section Item 22 Annual SLAMS Certification Monitoring Report for North Carolina for 2007 Ozone data for Early Action Compact monitors

Dear Ms. Banister:

This letter is to certify that the ozone data from eleven monitors from four Early Action Compact areas (parameter code 44201) for the North Carolina Division of Air Quality (0776-NC DAQ) have been completely submitted to AQS and that the ambient data are accurate to the best of my knowledge, taking into consideration the quality assurance findings.

The Early Action Compact areas (see attached map) and the corresponding ozone monitors are:

AQS #	County	Early Action Compact Area
37-003-0004	Alexander	Unifour
37-027-0003	Caldwell	Unifour
37-051-0008	Cumberland	Fayetteville
37-051-1003	Cumberland	Fayetteville
37-059-0002	Davie	Triad
37-081-0013	Guilford	Triad
37-157-0099	Rockingham	Triad
37-033-0001	Caswell	Triad
37-087-0004	Haywood	Mountain
37-087-0035	Haywood	Mountain
37-087-0036	Haywood	Mountain

Ambient Monitoring Section
1641 Mail Service Center, Raleigh, North Carolina 27699-1641
2728 Capital Blvd., Raleigh, North Carolina 27604
Phone: 919-715-0665 / FAX 919-733-1812 / Internet: www.ncair.org

One NorthCarolina Naturally

An Equal Opportunity/Affirmative Action Employer – 50% Recycled/10% Post Consumer Paper

Annual Summaries

We are submitting to OAQPS an AQS Quick Look Report (AMP450) and the Quality Indicator Summary Data Extraction standard report (AMP 255) containing precision and accuracy information. The Buncombe and Forsyth county monitors will be certified under a separate cover.

These reports have been transmitted electronically to David Lutz in the Office of Air Quality Planning and Standards, as instructed, so that database certification flag can be properly set.

If you need more information concerning this submittal, or have other questions, please contact me at 919/733-1487 or Dr. Wayne Cornelius at 919/715-3460.

Sincerely,

Hoke P. Kimball

Hoke P. Kimball
Chief

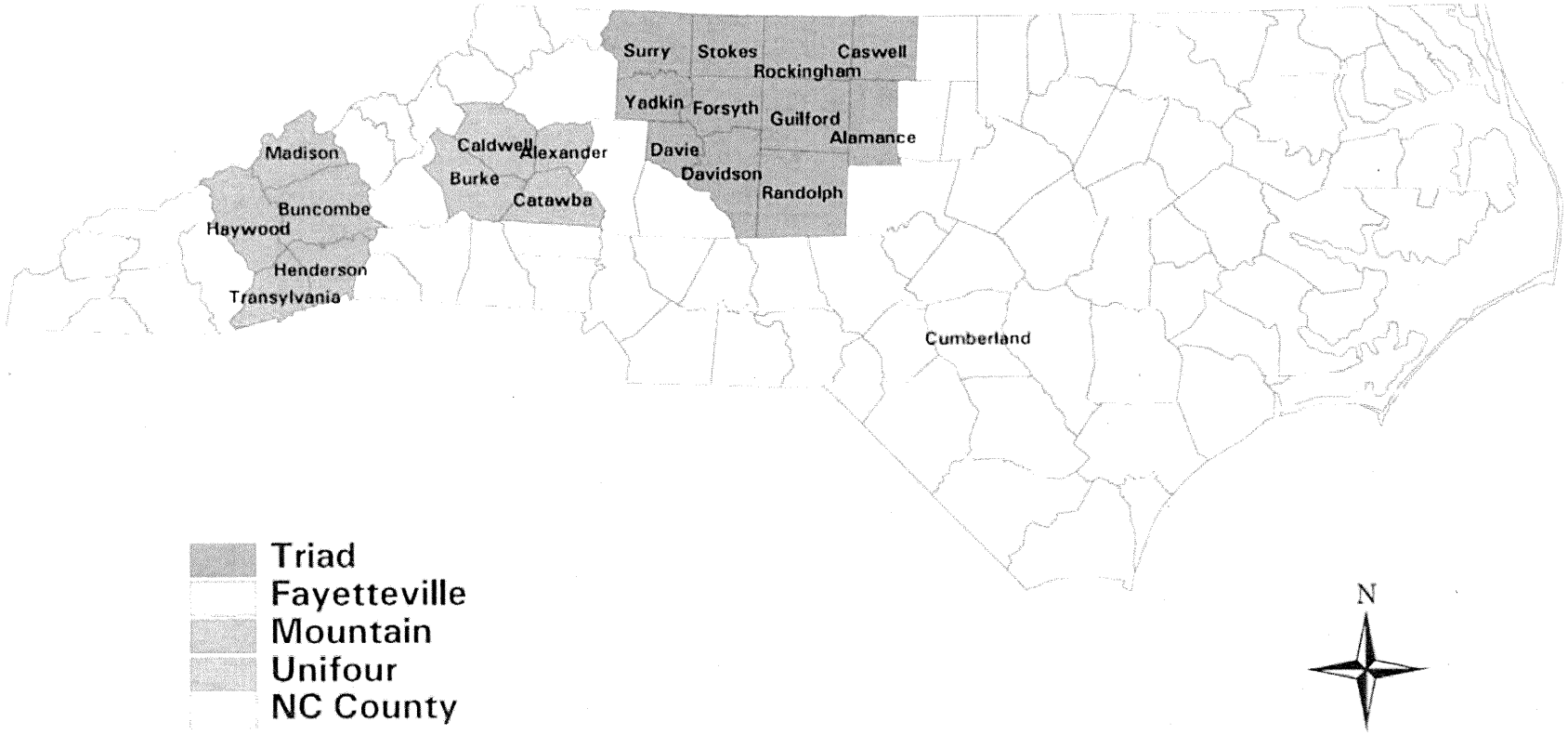
HPK:hpk

Attachments: Early Action Compact map and AMP 450 and AMP 255 reports
CC w/o AMP reports: Artra Cooper [EPA Reg. IV Atlanta]
Doug Neeley [EPA Reg. IV - Atlanta]
Dannie France [EPA Reg. IV- Athens]
Keith Overcash\Brock Nicholson [NC DAQ]
Laura Boothe [NC DAQ]
George Bridgers [NC DAQ]
Margaret Love [NC DAQ]
Michael Landis [NC DAQ]
Steven Vozzo [NC DAQ]
Joette Steger [NC DAQ]
Charles Davis [NC DAQ]
Wayne Cornelius [NCDAQ]
David Lutz, [EPA OAQPS] David Lutz, MQAG (C339-02), USEPA, RTP, NC 27711

AMP450 & AMP 255 Reports emailed to :
Lutz.David@epamail.epa.gov.
Cooper.Artra@epamail.epa.gov

EPA 2007 SLAMS certification request for EAC ozone 12_31_07.doc

North Carolina's Early Action Compact (EAC) Areas



Unifour Early Action Compact

Biannual Progress Report / December 2007
Final Report

Compiled by:

Tony R. Gallegos
Western Piedmont Council of Governments

Contents

Part A: Local Member Progress **2**

Overview of Unifour EAC Program **3**

Local Control Measures Implemented in the Unifour **3**

Update on Local EAC Member Activities **5**

Part B: Assessment of Local Air Quality and Ozone Trends **13**

Appendices A-F **39**

A. Unifour Air Quality Committee (UAQC) Minutes (July-Dec)

B. Unifour Air Quality Committee By-Laws

C. Unifour Air Quality Conference Summary and Evaluations

D. Statewide Interagency Consultation

E. Wood Stove Study Summary

F. Assorted Articles Press Releases

PART A

Local Member Progress

Submitted by

Unifour Air Quality Committee

and

Western Piedmont Council of Governments

Contributors:

Alexander County
Town of Taylorsville
Burke County
City of Morganton
Caldwell County
City of Lenoir
Catawba County
City of Hickory
City of Conover
City of Newton

Overview of Unifour EAC Program

As a requirement of the Unifour Early Action Compact (EAC) reporting schedule, this document represents the Unifour's progress in continued implementation of the local emission reduction strategies.

This document illustrates efforts being made in the Unifour to reduce the formation of ground level ozone pollution. It serves to "facilitate self-evaluation and communication with EPA, NCDENR, stakeholders, and the public" in regards to the EAC program and to promote the program's goal to achieve cleaner air faster in the Unifour region. It documents the area's progress regarding the implementation of local control measures and provides specific information identifying the government agency or department that has the responsibility for implementation of each measure. In June 2007, the Unifour submitted the previous biannual progress report detailing activities that have taken place in the region up to that point and significant progress being made implementing the control measures. This document builds on previous progress reports and describes stakeholder meetings and other activities by local members that have occurred since July 1, 2007.

The local emission reduction strategies were adopted and implemented based on their suitability for addressing ozone pollution from three primary approaches: education/awareness, transportation, and land use activities. Throughout the Unifour region there have been widespread efforts towards educating the public and raising awareness about air quality while also suggesting practical methods individuals can use to help improve the region's ambient air quality. Presentations to school children and elected officials, as well as a sustained media campaign focusing on ozone, have been the foundation of the education/outreach program. Local and regional newspapers, television and radio, and a growing internet presence, have also been very useful in making Unifour residents aware about ozone and air quality conditions.

This report provides a summary of the local control measures and assesses the Unifour's progress toward completion of the current milestone of implementing each strategy.

Local Control Measures Implemented in the Unifour

Please also see attached summary file: UnifourEAC_Prog_Rep_1206.xls

1. Expand the Inspection and Maintenance program for passenger vehicles. Catawba County began July 1, 2003; Burke and Caldwell Counties began July 1, 2005. Authority and responsibility: NCDMV.

2. Expand Public Transportation and Ridesharing Programs. Implemented/Ongoing. A significant fixed route modification has been implemented in the Piedmont Wagon Transit System, effectively increasing the system's service area. Five new less polluting and more efficient buses have been purchased by PWTS. Authority and responsibility: Greater Hickory MPO and City of Hickory/PWTS.

3. Promotion of Compressed Work Weeks and Flex-time. All ten members have agreed to this measure which is estimated to reduce NOX 1.3 tons/year. Authority and responsibility: Local EAC members.

4. Develop Regional Bicycle and Pedestrian Plan. Has been estimated to reduce NOx 1.6 tons/year and VOCs 2 tons/year. Greater Hickory MPO/Local EAC members.

5. Outdoor Burning Ban. The NC Environmental Management Commission approved a new rule that bans open burning on "Air Quality Action Days" when the AQI is Code Orange or above. Authority and responsibility: NCDAQ.

6. City and County Energy Plans. An energy conservation plan has been developed and adopted by all ten local EAC members that directs city and county departments to reduce energy consumption and conserve natural resources in an effort to reduce emissions from EGUs. Authority and responsibility: Local EAC members.

7. Alternative Fuel Vehicles and the Clean Cities Program. The UAQC is a Core Stakeholder in the Centralina Clean Fuels Coalition and all members of the EAC are committed to the pursuit and use of alternative fuel technologies. The area has several refueling stations for AFVs including biodiesel, CNG, and ethanol. Authority and responsibility: UAQC, Greater Hickory MPO, and Local EAC members.

8. Support Efforts and Coordination of Metropolitan Planning Organization and Rural Planning Organization. The Greater Hickory MPO and Unifour RPO do long range transportation planning to ensure that highway and transit programs conform to the air quality goals established by the EAC. Authority and responsibility: MPO/RPO and Local EAC members.

9. Improve Traffic Operational Planning, Engineering, and Maintenance. The City of Hickory optimized its synchronized traffic signals along US 321, effectively increasing traffic flow and reducing congestion. Authority and responsibility: MPO/RPO and Local EAC members.

10. Implement Smart Growth, Mixed Use and Infill Development Policies. This measure helps reduce vehicle miles traveled and improve air quality through land use management programs. Several members have adopted land use regulations based upon Smart Growth concepts. Authority and responsibility: Local EAC members.

11. Air Awareness Program. All local members participate in the Air Awareness program and have adopted "Ozone Action Plans" that include provisions to help reduce ozone formation. Authority and responsibility: UAQC and Local EAC members.

12. Adopt a Local Clean Air Policy. Local stakeholders promote air quality awareness and work to minimize ozone pollution in their respective local communities. Authority and responsibility: Local EAC members.

13. Air Quality Contacts for Each Local Member of the EAC. Contacts disseminate information to local governments and assure adherence to goals of the EAC program. Authority and responsibility: Local EAC members.

14. Landscaping Standards and Urban Forestry. Implementation throughout Unifour to help mitigate the effect of the "Urban Heat Island" and promote energy conservation and reduce emissions from EGUs. Authority and responsibility: Local EAC members.

Update on Local EAC Member Activities

UAQC, UAQOC, and WPCOG

During the past six months, staff at the Western Piedmont Council of Governments (WPCOG) has continued to work on air quality issues in the Unifour Area related to the formation of ground level ozone pollution. Kitty Barnes, Chair of the Catawba County Board of Commissioners, has continued to serve as Chair of the Unifour Air Quality Oversight Committee (UAQOC) and regularly presided over the group's monthly meetings. The UAQOC is made up of elected officials from the local members of the Unifour Early Action Compact for Ozone and oversees actions taken relevant to air quality. Along with other stakeholders, the group has been instrumental in the implementation of the local control measures and in the promotion of outreach and educational initiatives to improve both air quality and air quality awareness throughout the region. The following is a list of major tasks WPCOG staff has recently been engaged in during the past several months:

- Gather results and distribute information about the most current values from the region's ozone monitors in Alexander and Caldwell County.
- Provide technical assistance and information to EAC members and stakeholders relevant to alternative fuels and alternative fuel vehicles. Core stakeholder in the Centralina Clean Fuels Coalition and active participant in the Southeast Diesel Collaborative.
- Assist local environmental organization and UAQC stakeholder, the Catawba Valley Heritage Alliance, in acquiring grant funding from NCDAQ in the amount of $25,000 for installing a commercial biodiesel refueling station in Catawba County.
- Serve as liaison between the UAQC and staff of the U.S. EPA and NCDAQ to help assure that all requirements of the EAC program are followed and that the Unifour area maintains its deferred nonattainment status for ozone.
- Host monthly UAQC meetings to coordinate EAC efforts and provide administrative support to the members of the EAC. During the period July 1, 2007 through December 31, 2007 meetings were held on the following dates: August 28, OCTOBER , (Minutes in Appendix).
- Continue the education and outreach component of the EAC to help make area residents aware of health effects of ozone pollution in the Unifour. John Tippett appeared on local radio station WHKY to report on the ozone season and other ongoing efforts to improve air quality locally.

- Make presentations to local governments and other stakeholders regarding ozone pollution. Multiple WPCOG staff all assisted with a Solar Home Tour, Air Quality Booth and Alternative-fuel vehicle presentations at Catawba River Festival, EPA Brownfield Project and regular UAQC meetings at the WPCOG.

- Distribute informational materials throughout the region providing residents with information about the NC Air Awareness program and ways to help reduce ozone pollution.

- Support efforts to maintain media coverage on the ozone issue throughout the region. Area newspapers, radio and cable television stations have been publishing reports about air quality issues and the NC Air Awareness ozone forecasts

- Continues to coordinate a regional transit consolidation study that has a focus on air quality and congestion mitigation as one of the key issues and benefits of combining the four county's community transportation programs.

Local Member Activities

All ten local members of the Unifour Early Action Compact have been actively participating in the EAC program. During the past six months activities have consisted of continued participation in the NC Air Awareness program, maintaining an education/outreach program, and sustaining a media campaign concerning ozone pollution. The following summary details the local member's progress towards implementing local measures to reduce ozone pollution.

Alexander County and Taylorsville

Both Alexander County and Taylorsville are continuing to implement emission reduction strategies during the ozone season. Each has an air quality contact person on staff who regularly attends the meetings of the UAQC. They have established a joint stakeholder group to focus on local air quality issues. Taylorsville has been researching alternative fuels and alternative fuel vehicles and are currently examining the feasibility of replacing existing fleet vehicles with hybrid electric vehicles. Alexander County has achieved the following during the past few months:

- Presentation to Alexander Board of Commissioners about the 2007 ozone season and the need to maintain commitment to the EAC program.

- Monthly representation at the Unifour Air Quality Committee and Unifour Air Quality Oversight Committee Meetings.

- Continued the 'Alexander County Clean Air Campaign' with 19 participating organizations or companies from the public education to industrial/ manufacturing sectors.

- Posted asthma and ozone awareness notices on the Government Channel of Charter Communications for Alexander County

- Send daily NC Air Awareness forecasts to variety of organizations

- Send a daily ozone forecast to the local radio station, WACB 860, for announcement

- Attendance and participation in the Greater Hickory MPO and Unifour RPO.

- Ozone awareness notices broadcast on the local government cable channel potentially reaching over 3,000 subscribers daily.

- Daily local radio announcements of forecasted ozone conditions.

- Flags representing high ozone action days are poised to be flown at each occurrence. The flags are positioned in prominent locations along several thoroughfares throughout the area reaching passengers in approximately 9,000 vehicles.

- 91 Alexander County Government employees work a compressed work week, flexible hours, or hours when vehicle travel is outside peak driving times.

- Taylorsville reduced its energy …the reduction in savings coming mostly during the summer months. Taylorsville continued to save/cut approximately $10,000 in fuel costs in summer period.

- Taylorsville is also exploring the use of hybrid vehicles for its police department.

Caldwell County and Lenoir

Caldwell County continues its innovative approach towards air quality awareness and reducing ozone pollution. The County has formed a stakeholder group comprised of representatives from local governments, industry, and education to address local air quality issues. Some of the highlights and recent implementations from their program include:

- Creation of the Alternative Energy Task Force, a committee appointed by the Caldwell County Board of Commissioners to research the development and use of alternative fuels and renewable energy sources such as biodiesel and landfill gas.

- Posted ozone awareness notices on the Government Channel of Charter Communications for Caldwell County, running daily during ozone season, reaching a potential 17,000 subscribers; representing 56.7% of the households in Caldwell County. In addition, notices were also posted on the UHF channel 49 increasing a potential of 72.4% of the households in Caldwell County.

- Send daily ozone forecasts to 12 businesses/organizations, 500 county employees, 30 schools and community college, 13 townships, NC Forest Service five to local media outlets and 20 fire/emergency management personnel. All receiving daily alerts were instructed to post a printed copy of the daily alert on entrance/exit doors so those without email could read the daily forecast.

- Send a daily ozone forecast to the three local radio stations, WJRI 1340, WKGX 1081 and WKVS-KICKS 103.3 FM.

- Fly color-coded ozone flags-green, yellow and orange/red daily throughout the ozone season to alert county residents of the air quality index for the day. The flags are flown at selected businesses, fire departments, NC Forest Service, county offices, local municipalities and schools/community college as visual alerts of the air quality.

- Produced and aired a 30 minute ozone program on government cable channel to educate the public about ground level ozone and ways to help reduce the ozone levels.

- Continued media campaign via local newspaper and radio to notify residents of ozone conditions.

- Distributed ozone materials at health fairs, community events and placed a bulletin board with materials at the health department.

- Have an ozone webpage on the health department website with current information. The county website also has a link on its' homepage to access the ozone alerts.

- Continued the use of a zero emissions electric vehicle for parking enforcement in the Central Business District. This use of this vehicle from July 1, 2006 through December 31, 2006 eliminated the emissions from operating a gas-powered vehicle for approximately 360 hours, or 2,400 miles, based on average daily operation.

- Implemented portions the Lenoir Air Quality Awareness Plan and alerted all City departments of high ozone forecasts so that they could make adjustments to various work programs if necessary.

- Constructed a 2.03-mile extension of the Lenoir Greenway. When completed, the greenway will provide 5-miles of non-motorized transportation alternatives connecting multiple public facilities and providing a safe pedestrian access across U.S. Highway 321.

- Continued the implementation of "Smart Growth" strategies by approving two "cluster" in-fill subdivisions that take advantage of existing infrastructure and increased density while preserving open space.

- Continued the use of a four-bicycle patrol unit in the Lenoir Police Department. One bicycle is used to patrol the Lenoir Greenway and the others are used in densely populated neighborhoods and in the Central Business District where traditional patrol units have difficulty maneuvering.

- Converted four city blocks of downtown streets from one-way to two-way traffic to improve traffic circulation and reduce travel times and distances in the Central Business District.

- Completed the construction of a centralized parking plaza in the Central Business District to encourage pedestrian traffic between businesses and minimize unnecessary automobile use for multiple stops.

Burke County and Morganton

Burke County has implemented its "Air Quality Awareness and Action Plan" and has adopted the "Energy Conservation Plan" to help reduce ozone pollution in the area. The City of Morganton also remains active promoting air awareness through an ongoing media campaign and the City's web page (http://www.ci.morganton.nc.us/Morganton_City_Hall/morganton_ozone_.html). In addition to these activities Morganton is implementing its strategy to reduce ozone pollution through progressive land use activities. The 400 Union Square Project is a mixed use redevelopment project realized as a result of actions by the Morganton Redevelopment Commission and the City of Morganton which is "designed to reduce vehicle traffic by placing residential properties in the heart of downtown within walking distance of many retail shops and service locations." The City has also established a stakeholder group to focus on local air quality issues and under the direction of the City Manager's office continues to implement its "Ozone Action Plan" which includes the following components:

- Notice of the NC Air Awareness forecasts are put on COMPAS, the City's cable TV system, and local news media are notified.

- Fueling from the City's gasoline pumps is limited to before 9am or after 6pm.

- Public works crews modify work schedules to work earlier shifts and end work earlier in the day. Use of gasoline powered tools and equipment is limited.

- Electric Department workers and meter readers end outdoor work at noon and do office work in the afternoon.

- Several Departments curtail outdoor field work and inspections and have employees perform inside work.

In addition to continuing to implement the City of Morganton's ongoing air quality action plan in 2006, there were several other activities of note concerning air quality in Morganton:

- Construction has continued throughout the year on the conversion of a former textile mill in downtown into 37 apartment units and additional commercial space. A portion of this building was occupied by the Morganton City Hall in 2002, but the remainder of the building renovation was delayed. The project is the result of a public-private partnership between the City and a private developer and follows the City's plans for downtown development. The location of these residential units which is within walking distance of downtown businesses and services is designed to reduce traffic congestion and thereby lessen auto emissions. Occupancy of these units is expected in early 2007.

- The City continued policy of declaring "casual dress days" for City employees on ozone action days. City employees enjoy these days when they are allowed to dress more informally at work. Employees became much more aware and interested in ozone forecasts since high ozone days were also declared as "casual dress days."

- Some departments held eat-in lunches on ozone action days where food was brought in for lunch thereby reducing the number of employees driving during the middle of the day.

- The Electric Department rescheduled project assignments on ozone action days to reduce the use of heavy equipment.

Catawba County, Hickory, Newton, and Conover

Catawba County and the Cities of Hickory, Newton, and Conover have been very proactive in the development of an air quality program for several years. This has continued to be true throughout the past several months with their many ongoing ozone related activities. The City of Hickory and Conover have been instrumental in promoting AFVs in the region through their CNG refueling station, which remains open to the public. Hickory also continues to implement its Hickory by Choice planning initiative focusing on smart growth, as well as other land use activities that help to improve air quality in the region.

Other air quality activities by the City of Hickory include:

- Linked city website with Dept of Air Quality ozone and PM 2.5 daily forecasts.
- Adopted and is actively implementing its Ozone Action Day Plan.
- Continued implementation of recommedations from energy audit and conservation plan for city buildings.

- Continues to manage the Piedmont Wagon Transit System to provide transportation alternatives to the individual automobiles.
- Continues to implement through construction a sidewalk and bikeway plan to improve walking and biking as transportation alternatives.
- Mandates sidewalk construction for all new residential and commercial development to extend and interconnect the sidewalk system and improve community walkability.
- Has adopted biodiesel for all diesel vehicles.
- Was designated a "Tree City USA," and purchased software to monitor changes in tree cover and promote improved tree cover in the community.
- Continues to participate in the Unifour Air Quality Committee and the Greater Hickory Metropolitan Planning Organization.
- Is continuing converting traffic signals to LEDs.

Catawba County has maintained its progressive air quality program through sustained outreach and education, awareness and behavior modification programs, and land use regulations that are designed to improve air quality. The County actively promotes air quality improvement to all employees and sponsors an air quality "contest" providing incentives to those who help reduce ozone pollution. This initiative takes an innovative approach to air awareness by using the county's intranet to track and report activities that help improve air quality, including car pooling, ride sharing, transit usage, compressed work weeks and other actions that help reduce vehicle miles traveled. Additional activities include presentations made by Health Department employees throughout the County school system, including to 10th grade high school students and approximately 2000 elementary school students. There have been air quality PSAs broadcast on the local television station, several newspaper articles featuring air quality issues, and a variety of other awareness activities including information being provided in Spanish to the local Hispanic population. Other air quality activities by Catawba County include:

- Contests
- In an effort to increase air quality awareness and decrease air quality pollution, two contests were offered to county employees this year. One was a monthly trivia quiz that ran all year for air quality in general. The other was the on-going friendly ozone contest during ozone season between county and City of Hickory employees for the 3rd ozone season in a row. Employees logged activities during ozone season that helped reduce pollution. Monthly and grand prize awards were given. The county grand winner was recognized at the annual county banquet in October.
- Air Quality alerts
- Air quality alerts were sent to all county employees and signs were posted at Public Health and other county buildings. Employees were encouraged to wear their new, 3-color (orange, red and purple) air quality alert buttons on warning days.

- Press Releases
- Air quality press releases were sent to the local newspapers, radio, and television as well as the county newsletter called the Spirit to educate people on air quality.
- Air quality information was posted on the county web site.
- Educational activities were provided to county employees and the community at large:
- Air quality education and a presentation were provided at every county orientation during ozone season.
- Provided air quality education to four 7th grade science classes at Mill Creek Middle School in September 2007.
- Provided air quality education to seven 5th grade classes during Environmental Awareness Day at Southside Park in Newton in October 2007.
- Implement Smart Growth, Mixed Use and Infill Development Policies
- The county is in the process of expanding a mixed use corridor in the Hwy. 150 & 16 area to implement a recommendation in the Sherrill's Ford Small Area Plan. This will allow a higher density of mixed use development in an area planned for expanded public utilities thus promoting a smart growth strategy.
- Landscaping Standards and Urban Forestry
- The county has recently entered into a purchase option/contract to acquire up to 600 acres on Little Mountain Road for the future regional passive and educational park. This park will function much like the State's Educational Parks, teaching forestry management, environmental and preservation practices. The acquisition of these 600 acres on Lake Norman will help protect a key water source and protect the air quality of the area by preserving a major growth of timber.

Summary

The EAC in Catawba County has greatly increased both staff and community awareness regarding air quality. The issue of air quality is one that is discussed consistently when we do presentations, on health and health practices. It has permeated many levels of the county government structure and is routinely part of the discussion when other governmental issues are reviewed. Air quality continues to be a topic of conversation and discussion among both public and private sector organizations. It is part of the curriculum we use for 2nd grade tours to Public Health. The Catawba County Chamber of Commerce has recently created an Environment Committee of which air quality is an important subject area.

As part of the NC Air Awareness program, the City of Newton has adopted and is actively implementing its "Ozone Action Day Plan." Newton has also formed a local stakeholder group to address local air quality issues and the City distributes informational material to its residents regarding ozone pollution and has been researching alternative fuel vehicles. The City of Newton is promoting the development of a Regional Transit Authority to help expand

transit services throughout the Unifour area. As a participant in the Unifour EAC, Newton promotes compressed work weeks and flexible schedules for city employees.

Other air quality activities in Newton since July include:

- Construction of the Heritage Trail greenway project.
- Continued implementation of Air Quality Action plan through involvement and participation of all city departments.
- Air quality links and information made available via city website.
- Staff has made presentations to civic and other interest groups that incorporated information about air quality during the year.
- The City of Conover is participating in a Regional Transit Implementation Study.
- Continued participation in the NC Air Awareness program.
- Attend and regularly participate in meetings and actions of the regional air quality committee in an effort to identify and develop local air quality improvement actions
- Continued membership in the Greater Hickory MPO.
- Continued funding contribution to Piedmont Wagon Transit System.
- Included funds in fiscal year 2007-08 budget to purchase alternative fuel vehicles.
- Working with internal group of city employees to explore the use of biodiesel and alternative fuels, oils and lubes.

The City of Conover is an active participant in the Unifour Early Action Compact (EAC) and activities over the past 6 months include:

- Implementation of the City of Conover Energy Conservation Policy and Energy Plan.
- Furthered implementation of EAC & Air Quality Awareness Action Plan including:
    - Active participation and notification of Ozone Action Days (OADs)
    - Implemented use of alternative fuel by converting fleet vehicles to biodiesel.
    - Continued use of summer bike patrol by Conover Police Department.
    - Implementation of flex time for certain departments.

- Start time for trash pick-up moved to 5am to reduce effects of vehicle emissions and traffic congestion.

- Continued membership in the NC Air Awareness Program/Enviroflash.

- The Planning Director has continued to serve as the air quality and EAC contact.

- Actively participated in the local Unifour Air Quality Committee (UAQC) as a means to identify and recommend locally feasible air improvement actions.

- Collected reports of measures taken by department heads on high ozone action days, including the encouraged use of carpooling and non-use of 2 cycle engines.

- Continued implementation of minimum landscape standards for new developments that promote strategic tree planting, street trees, and parking lot trees in an effort to reduce the heat island effect, reduce the need for air conditioning and help reduce energy usage.

- Continued evaluation of a tree preservation ordinance.

- Continued use of Smart Growth based ordinances that encourage compact development and mixed uses in an effort to help reduce vehicle travel and encourage pedestrian activity.

- Application submitted to NCDOT for Comprehensive Pedestrian Plan Grant for a citywide pedestrian plan that would assess the current sidewalk infrastructure, identify areas in need of sidewalks, and provide a public education and encouragement program promoting the benefits of walking.

- Participation and support of the Greater Hickory Metropolitan Planning Organization and Unifour Rural Planning Organization.

- Contribute to and encourage use of Piedmont Wagon system and require bus stops be implemented in new development where feasible.

- Member of Regional Transit Steering Committee formed to investigate expansion of Piedmont Wagon services throughout the four county area.

- Continued study on implementation of increased citizen notification of high ozone days via web page notification and the use of colored flags at key locations.

- Provided press releases during peak season to demonstrate the steps taken by the City of Conover to reach the goals of the EAC.

PART B

Assessment of Local Air Quality and Ozone Trends

Prepared by NCDAQ

Preface

This document contains the 8-hour ozone maintenance plan tracking report for Early Action Compact Areas in North Carolina. Updated report to follow directly from NCDAQ.

Executive Summary

The Early Action Compact Agreement
Early Action Compact (EAC) areas were given the opportunity to develop local control strategies to meet the 8-hour ozone National Ambient Air Quality Standard (NAAQS) earlier than required by the Clean Air Act. In turn, the United States Environmental Protection Agency (USEPA) agreed to defer the effective date of the nonattainment designation for these areas. If an EAC area attains the 8-hour ozone NAAQS by December 31, 2007 and meets all of its EAC milestones, the USEPA will designate the area as attainment. The EAC areas in North Carolina include the Cumberland County EAC area; the Mountain EAC area (Buncombe, Haywood, and Madison Counties); the Triad EAC area (Alamance, Caswell, Davidson, Davie, Forsyth, Guilford, Randolph, Rockingham, Stokes, Surry, and Yadkin Counties); and the Unifour EAC area (Alexander, Burke, Caldwell, and Catawba Counties).

Annual Review of Growth
The annual review of stationary point source emissions shows the Mountain, Triad and Unifour EAC areas experienced decreases in nitrogen oxides (NOx) emissions for the period evaluated. Two individual counties within EAC areas, Madison County (Mountain EAC) and Yadkin County (Triad EAC), reported NOx emissions from stationary point sources at levels high enough to meet one of two action triggers. Increases for both counties can be attributed to the fact that there were no NOx sources in those counties in the 2000 base year. Additionally, these sources are insignificant compared to the total NOx emissions emitted in their respective EAC areas.

The annual review of the average annual vehicle miles traveled (VMT) growth rate comparison between the VMT used in the EAC State Implementation Plan (SIP) and the latest data from the North Carolina Department of Transportation (NCDOT) shows that the average annual growth rate for the EAC areas have decreased.

Impact on Ozone Formation
Weather conditions during the 2007 ozone season were very favorable for ozone formation. All of the EAC areas experienced slight increases in the 8-hour ozone design values from 2004-2006 to 2005-2007. The EAC areas observed relatively few exceedances of the 8-hour ozone standard during 2007, despite the weather conditions that were historically conducive to ozone production. All areas observed far fewer exceedances than in 2002 (which was another warm and dry ozone season) and were generally below the average number of exceedance days for 1994-2003.

Conclusion
Neither the stationary point source nor mobile source action triggers detailed in the maintenance plan section of the SIP were met. The report demonstrates that the EAC areas continue to attain the 8-hour ozone standard and that no further action is required.

Table of Contents

Executive Summary....16

I. Background....18

II. Annual Tracking for Growth....18
Stationary Point Source Emission Inventory Data Review 18
Mobile Source Emission Inventory Data Review.... 22

III. Air Quality Analysis 25
1-hour Ozone Design Value Trends 26
8-hour Ozone Design Value Trends 27
1-Hour & 8-Hour Ozone Exceedance Trends.... 29
4th Highest Value Trends 30
2007 Ozone Season Weather Patterns 32

IV. Overall Summary and Conclusions 34

Appendices and some information for other EAC comunities not included

I. Background

On December 17, 2004, the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Air Quality (NCDAQ), submitted to the United States Environmental Protection Agency (USEPA) North Carolina's 8-hour ozone National Ambient Air Quality Standard (NAAQS) attainment demonstration for regions designated as Early Action Compact (EAC) areas. The EAC areas in North Carolina include the Cumberland County EAC area; the Mountain EAC area (Buncombe, Haywood, and Madison Counties); the Triad EAC area (Alamance, Caswell, Davidson, Davie, Forsyth, Guilford, Randolph, Rockingham, Stokes, Surry, and Yadkin Counties); and the Unifour EAC area (Alexander, Burke, Caldwell, and Catawba Counties).

Early Action Compact areas were given the opportunity to develop local control strategies to meet the 8-hour ozone NAAQS earlier than required by the Clean Air Act. In turn, the USEPA agreed to defer the effective date of the nonattainment designation for these areas. If an EAC area attains the 8-hour ozone NAAQS by December 31, 2007 and meets all of their EAC milestones, the USEPA will designate the area as attainment. The Mountain EAC area in North Carolina was designated as attainment in April 2004; however, the three counties listed above decided to continue their EAC agreement because of the public health benefits of the program. The December 2004 attainment demonstration predicts all of North Carolina's EAC areas meeting the 8-hour ozone NAAQS by December 31, 2007 and maintaining that standard through 2017. The air quality in the EAC areas has improved considerably since the designations. The Unifour and Cumberland EAC areas attained the 8-hour ozone NAAQS with the 2002-2004 design value period, three years earlier than required. Whereas, the Triad EAC area attained the 8-hour ozone NAAQS with the 2003-2005 design value period, two years earlier than required.

The NCDAQ committed to annual tracking of stationary point and highway mobile sources emission inventories data to assess progress in meeting these attainment goals. This is the third annual tracking report submitted to meet that commitment.

II. Annual Tracking for Growth

Stationary Point Source Emission Inventory Data Review

In the December 2004 attainment demonstration submittal, the NCDAQ committed to conduct an annual review of growth of stationary point sources by comparing the latest available annual stationary point source NOx emissions inventory to the 2000 base year NOx inventory used in the attainment demonstration air quality modeling analyses. For this

report, the latest stationary point source inventory available is for 2005. The NCDAQ committed to both a county-by-county comparison and a composite for the entire EAC area.

Tables 1 - 4 below show the total NOx emissions from all permitted stationary point sources (in tons per year) for 2000 and 2005. Only larger facilities with Title V permits are required to report emissions annually. Therefore, the NCDAQ had to estimate emissions for facilities that were not required to report emissions in 2005. Since these sources tend to be small and do not generally have significant emissions changes from year to year, the estimated emissions for these sources were based on data from the last year they were required to report. Facility-specific NOx emissions inventory data used to generate the following tables can be found in Appendix A (for calendar year 2000) and Appendix B (for calendar year 2005) of this report.

Table 1: NOx Emissions from Permitted Stationary Sources
Cumberland County EAC Area (tons/year)

	2000	2005	Percent Change
Cumberland County	831.7	669.3	(-)19.5%

Table 2: NOx Emissions from Permitted Stationary Sources

Mountain EAC Area (tons/year)

	2000	***2005***	***Percent Change***
Buncombe County	***6,931.4***	***5168.5***	***(-)25.4%***
Haywood County	***4,742.1***	***3861.0***	***(-)18.6%***
Madison County	***0***	***9.1***	***Greater than 100%***
Total for Area	*11,673.5*	*9,038.6*	*(-)22.6%*

Table 3: NOx Emissions from Permitted Stationary Sources

Triad EAC Area (tons/year)

	2000	***2005***	***Percent Change***
Alamance County	***418.3***	***302.7***	***(-)27.6%***

Caswell County	***8.3***	***3.1***	***(-)62.7%***
Davidson County	***4,454.4***	***1094.9***	***(-)75.4%***
Davie County	***68.9***	***36.2***	***(-)47.5%***
Forsyth County	***2,493.7***	***1050.6***	***(-)57.9%***
Guilford County	***657.5***	***630.1***	***(-)4.2%***
Randolph County	***362***	***162.5***	***(-)55.1%***
Rockingham County	***9,214.5***	***3992.3***	***(-)56.7%***
Stokes County	***32,513.1***	***20158.2***	***(-)38.0%***
Surry County	***475.5***	***298.9***	***(-)37.1%***
Yadkin County	***0***	***2.5***	***Greater than 100%***
Total for Area	*50,666.2*	*2,7732.0*	*(-)45.3%*

Table 4: NOx Emissions from Permitted Stationary Sources

Unifour EAC Area (tons/year)

	2000	***2005***	Percent Change
Alexander County	19.0	11.0	(-)42.1%
Burke County	344.5	261.6	(-)24.1%
Caldwell County	473.3	424.4	(-)10.3%
Catawba County	27,075	17453.9	(-)35.5%
Total for Area	*27,911.8*	*18,150.9*	*(-) 35.0%*

North Carolina agreed to identify and implement additional controls on stationary sources sufficient to offset the growth in the stationary source NOx emissions if:

- actual stationary source NOx emissions are greater than 10 percent higher than those emissions used in the EAC State Implementation Plan (SIP) modeling analysis either for an individual county or for the entire EAC area, **and**

- there has also been a corresponding increase in ozone levels in the area such that the latest 3 year design value is greater than 0.080 ppm.

When looking at the EAC areas as a whole, most counties show decreases in NOx emissions.

Madison County reported NOx emissions in 2005 that were greater than 10 percent higher than those emissions used in the 2000 EAC SIP modeling analysis. Madison County is in the Mountain EAC area. The increase in NOx emissions in Madison County can be attributed to the fact that there were no NOx sources in Madison County in the 2000 base year. The 9.1 tons/year of NOx emissions reported in Madison County in 2004 (and estimated for 2005) represent only a very small portion of the total point source NOx emissions reported in the Mountain EAC area, about 0.1%, and the entire Mountain EAC area as a whole saw approximately a 23% decrease in NOx emissions. Therefore, the NCDAQ does not believe further action is warranted to address this small emissions increase in one county since the entire area saw a significant decrease in point source NOx emissions.

Yadkin County reported NOx emissions in 2005 that were greater than 10 percent higher than those emissions used in the 2000 EAC SIP modeling analysis. Yadkin County is in the Triad EAC area. The increase in NOx emissions in Yadkin County can be attributed to the fact that there were no NOx sources in Yadkin County in the 2000 base year. The 2.5 tons/year of NOx emissions reported in Yadkin County in 2004 (and estimated for 2005) represent only a very small portion of the total point source NOx emissions reported in the Triad EAC area, less than 0.01%, and the entire Triad EAC area as a whole saw

approximately a 45% decrease in NOx emissions. Therefore, the NCDAQ does not believe further action is warranted to address this small emissions increase in one county since the entire area saw a significant decrease in point source NOx emissions.

The air quality analysis in Section III of this report shows the following counties in the Triad have a design value based on the last 3 years of data that rose above 0.080 ppm: Davie County (Cooleemee monitor) with 0.083 ppm, Forsyth County (Union Cross monitor) with 0.082 ppm, and Guilford County (Mendenhall monitor) with 0.082 ppm. However, NOx emissions decreased in all three counties with a 47.5% decrease in Davie County, a 57.9% decrease in Forsyth County, and a 4.2% decrease in Guilford County. Additionally, Cumberland County in the Cumberland County EAC area has a monitor with a 3-year design value currently at 0.082 (Golfview-Hope Mills). However, NOx emissions for Cumberland County have fallen approximately 20% under those emissions used in the EAC SIP modeling analysis. Since only one and not both of the triggers mentioned in the above criteria occurred, the NCDAQ does not believe further action is appropriate or required at this time.

Mobile Source Emission Inventory Data Review

The NCDAQ also committed to conducting an annual review of growth in highway mobile sources. If the two criteria below are met, the NCDAQ committed to estimate highway mobile source emissions to see if there was a greater than 10% increase in emissions compared to what was used in the EAC SIP. These criteria are:

- 2000-2006 annual Vehicle Miles Traveled (VMT) growth rate cannot exceed the 2000-2007 annual VMT growth rate by 10% for an individual county or the entire EAC area, **and**

- there cannot be a corresponding increase in ozone levels in the area such that the latest 3 year design value is greater than 0.080 ppm.

Table 5 below shows the comparison between the VMT from the EAC SIP and the VMT from the latest North Carolina Department of Transportation (NCDOT) data. Data used to generate Table 5, as well as further information on where this data was derived, can be found in Appendix C of this report.

Table 5: Comparison Between the EAC SIP VMT and the latest NCDOT VMT Data

	Annual VMT Growth Rate from EAC SIP	Annual VMT Growth Rate from Latest NCDOT Data	% Change
Cumberland Co. EAC Area			
Cumberland	1.66	0.78	-52.74
Unifour EAC Area			
Alexander	3.88	1.17	-69.74
Burke	2.01	0.66	-67.21
Caldwell	3.10	1.37	-55.95
Catawba	2.73	2.00	-26.91
Total Area	**2.67**	**1.46**	**-45.45**
Mountain EAC Area			
Buncombe	2.16	2.08	-3.69
Haywood	2.42	1.24	-48.81
Madison	2.29	1.97	-14.05
Total Area	**2.24**	**1.85**	**-17.37**
Triad EAC Area			
Alamance	2.29	0.53	-76.97
Caswell	2.40	0.48	-80.07
Davidson	2.82	0.37	-87.06
Davie	2.51	1.55	-38.18
Forsyth	2.32	1.38	-40.53
Guilford	2.17	1.32	-39.15
Randolph	2.87	0.71	-75.12
Rockingham	2.34	-0.61	-126.26
Stokes	2.20	1.14	-48.10
Surry	2.60	0.05	-97.91
Yadkin	2.29	1.20	-47.44
Total Area	**2.38**	**0.88**	**-62.82**

All of the EAC areas as a whole showed lower VMT growth during the period analyzed compared to the VMT growth assumed in the EAC SIP. Possible reasons for the decrease may be the higher price of gasoline and economy in the EAC areas.

As mentioned earlier, some monitors saw an increase in the 8-hour design value. However, the average annual VMT growth rates were all well below the 10% action trigger. Since only one and not both of the triggers mentioned in the above criteria occurred, the NCDAQ does not believe further action is appropriate or required at this time.

III. Air Quality Analysis

The NCDAQ is required to evaluate design value (DV) trends and ozone exceedance trends from 1994 to 2007 to determine if any of the EAC areas show increases in ozone formation. It should be noted, the 2007 ambient ozone data has been quality assured by the NCDAQ and will be officially submitted to the USEPA on or before December 31, 2007 as one of the milestones that must be met for the EAC areas.

Specifically, the NCDAQ evaluated the following data as part of the air quality analyses:

- 1-Hour Ozone Design Value Trends – Most recent 1-hour ozone design values compared to the trend in 1-hour ozone design values from the 1994-1996 timeframe to present.
- 8-hour Ozone Design Value Trends – Most recent design values (3 year average of the 4th highest 8-hour ozone average), compared to the trend in design values from the 1994-1996 timeframe to present.
- 1-Hour Ozone Exceedances – Number of exceedances of the 1-hour ozone standard at each monitor in the EAC areas for the most recent ozone season, compared to the number of exceedances at each monitor from 1994 to present.
- 8-Hour Ozone Exceedances – Number of exceedances of the 8-hour ozone standard at each monitor in the EAC areas for the most recent ozone season, compared to the number of exceedances at each monitor from 1994 to present.
- 4th Highest Value Trends – 4th highest 1-hour ozone value compared to the 4th highest 1-hour ozone value from 1994 to present.

The last bullet above, evaluating the 4th highest 1-hour ozone value trend, is believed to be an error in the original SIP. Since the current ozone NAAQS is an 8-hour standard and the 4th highest value is used in the design value calculation, it would make more sense to evaluate the 4th highest 8-hour ozone value trend. Therefore, only the 4th highest 8-hour ozone value comparison will be presented in this report.

A summary of the analysis is provided below. A description of weather patterns and climatology for the 2007 ozone season is also included.

1-hour Ozone Design Value Trends

Across all EAC areas, 1-hour ozone design values peaked during the 1997-1999 and 1998-2000 periods (see Table 6 below). Since this period, design values have steadily declined and have remained below the 0.12 ppm 1-hour ozone NAAQS. In the table below, the design values are presented in parts per million (ppm), with design values exceeding the standard highlighted in orange. Light shading indicates that no data was available; while an underlined value indicates fewer than three years or previous site data was used in the DV calculation.

Table 6: 1-hour ozone design values for each monitor in the EAC areas in North Carolina.

Region	Monitoring Sites	AIRS ID	1-Hour Design Value Summary (ppm)											
			94-96	95-97	96-98	97-99	98-00	99-01	00-02	01-03	02-04	03-05	04-06	05-07
Mountains	Bent Creek	37-021-0030	0.085	0.086	0.108	0.111	0.111	0.106	0.106	0.103	0.103	0.092	0.092	0.092
	Frying Pan	37-087-0035	0.095	0.095	0.106	0.107	0.107	0.104	0.098	0.098	0.098	0.091	0.091	0.092
	Purchase Knob	37-087-0036	0.094	0.106	0.103	0.105	0.103	0.102	0.104	0.104	0.104	0.091	0.091	0.092
	Waynesville	37-087-0004				0.090	0.094	0.094	0.095	0.091	0.091	0.084	0.082	0.084
Unifour (Hickory)	Waggin Trail (Taylorsville)	37-003-0004	0.094	0.094	0.110	0.110	0.111	0.106	0.110	0.106	0.104	0.095	0.090	0.094
	Lenoir / Caldwell Co.	37-027-0003	0.095	0.097	0.111	0.114	0.114	0.107	0.099	0.105	0.098	0.094	0.088	0.090
Triad	Cooleemee	37-059-0002	0.103	0.105	0.113	0.123	0.123	0.122	0.118	0.119	0.116	0.105	0.099	0.103
	Hattie Ave.	37-067-0022	0.108	0.115	0.115	0.117	0.113	0.112	0.116	0.116	0.116	0.102	0.096	0.098
	Union Cross	37-067-1008	0.109	0.115	0.120	0.119	0.118	0.110	0.110	0.109	0.108	0.097	0.098	0.100
	Shiloh Church	37-067-0028	0.118	0.110	0.112	0.112	0.112	0.113	0.115	0.115	0.113	0.088	0.084	0.089
	Cherry Grove	37-033-0001	0.109	0.111	0.118	0.118	0.119	0.112	0.119	0.114	0.112	0.099	0.089	0.094
	Mendenhall (McLeansville)	37-081-0013	0.111	0.109	0.112	0.112	0.115	0.112	0.121	0.121	0.121	0.103	0.101	0.107
	Bethany	37-157-0099	0.111	0.113	0.123	0.112	0.112	0.105	0.109	0.109	0.109	0.092	0.088	0.097
	Sophia	37-151-0004						0.102	0.104	0.104	0.104	0.095	0.084	
	Pollirosa	37-067-0027	0.096	0.096	0.107	0.111	0.111	0.107	0.107	0.107	0.103	0.086	0.073	
	Clemmons	37-067-0030										0.085	0.089	0.094
Fayetteville	Wade	37-051-0008	0.100	0.100	0.108	0.117	0.117	0.115	0.108	0.108	0.105	0.096	0.095	0.096
	Golfview (Hope Mills)	37-051-1003	0.106	0.105	0.108	0.109	0.109	0.106	0.106	0.105	0.105	0.102	0.096	0.096

Light Shading = No Data Available Underline = Fewer Than Three Years Or Previous Site Data In DV Calculation

Figure 1 below shows the trend in 1-hour ozone DVs for the different EAC areas. The graph shows the peak in the 1997-1999 and 1998-2000 design values in the Mountain, Unifour, and Fayetteville (Cumberland County) areas. After this period in the late 1990s, the design values for the areas decrease consistently with the Mountain and Fayetteville areas leveling off in recent years. After the 1996-1998 DV period, values in all areas roughly plateau until a significant drop is seen in the 2003-2005 DV period. The Unifour, Triad, and Cumberland County EAC areas saw continued decreases (but to a lesser extent) in the 2004-2006 DV period, with the Mountain EAC area leveling off. The latest DV period, 2005-2007 shows the Mountain and Fayetteville EAC areas continuing to level off, while the Triad and Unifour areas follows a slightly different trend with an upward trend in the last few years, although all areas fall well below the 1-hour ozone standard.

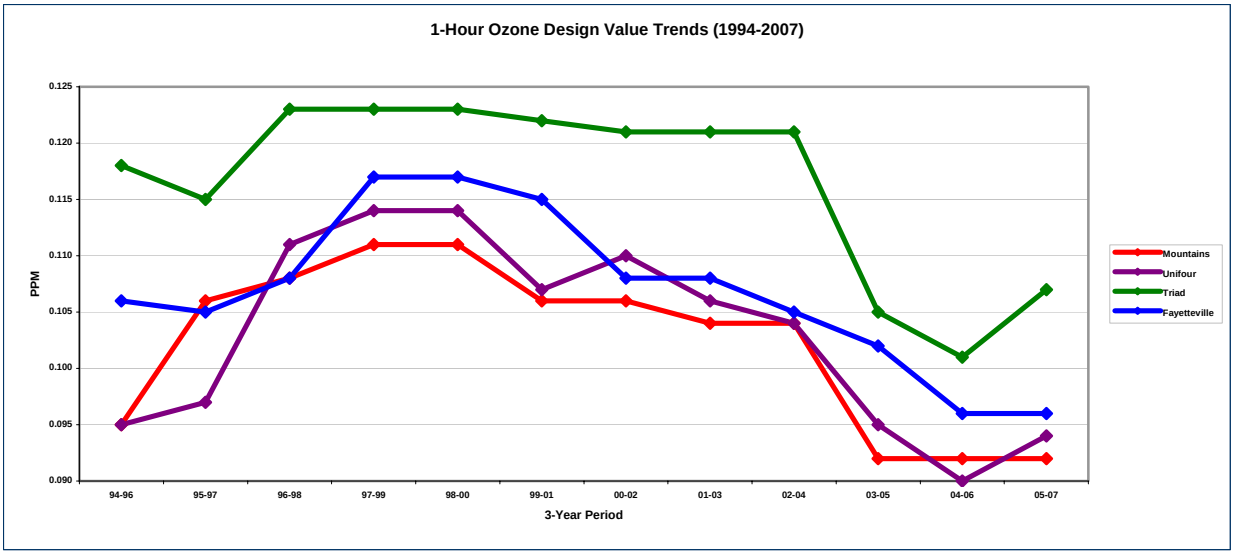


Figure 1: The graph displays the trend in the area-wide 1-hour ozone design values (in parts per million) for each EAC area from 1994-2007.

8-hour Ozone Design Value Trends

Much like the 1-hour ozone values, 8-hour ozone design values peaked in 1997-1999 and 1998-2000, with a steady decline in DVs in following years (see Figure 2 below). For the 2002-2004 DVs, only the Triad EAC area had a DV in excess of 0.085 ppm. With the 2003-2005 and 2004-2006 DVs, all EAC areas had DVs of 0.082 ppm or less and 0.080 ppm or less, respectively. The 2005-2007 DVs show the Triad and Fayetteville EAC areas with 0.083 ppm and 0.082 ppm, respectively, while the Mountains and Unifour EAC areas come in under 0.080 ppm with 0.079 ppm and 0.078 ppm, respectively.

Figure 2 below shows the trend in 8-hour ozone DVs for the different EAC areas. The graph shows the peak in the 1997-1999 and 1998-2000 design values, as seen in Table 7 below. There is a general decrease in the design values following the 1998-2000 period, with the exception of the Unifour area. This area showed a slight increase in the design value for the 2000-2002 period with a steady decrease in design values following this period. All areas are below the 8-hour ozone standard by the 2003-2005 period. The Unifour, Triad, and Fayetteville EAC areas saw continued decreases in the 2004-2006 DV period as well, with the Mountain EAC area showing a leveling off. The 2005-2007 DV period observed a small increase in all EAC areas. As discussed further in the 2007 ozone season weather patterns section, the 2007 season was very conducive to ozone development, with warm temperatures and relatively little precipitation.

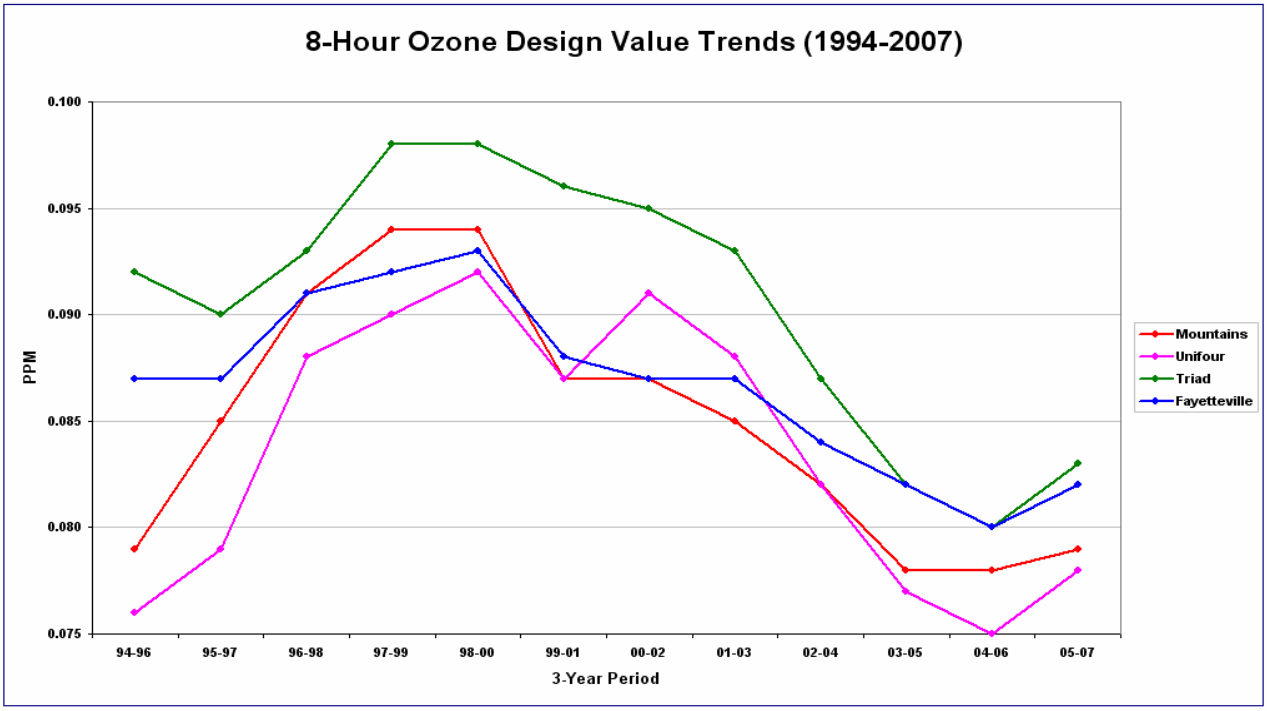


Figure 2: The graph displays the trend in the area-wide 8-hour ozone design values (in parts per million) for each EAC area from 1994 to 2007.

The 8-hour ozone design values for the monitors in the EAC areas are listed in Table 7. The design values are presented in ppm, with design values exceeding the standard highlighted in orange. Light shading indicates that no data was available while an underlined value indicates fewer than three years or previous site data was used in the DV calculation.

Table 7: 8-hour ozone design values for each monitor in the EAC areas in North Carolina.

Region	Monitoring Sites	AIRS ID	8-Hour Design Value Summary (ppm)											
			94-96	95-97	96-98	97-99	98-00	99-01	00-02	01-03	02-04	03-05	04-06	05-07
Mountains	Bent Creek	37-021-0030	0.073	0.075	0.079	0.083	0.088	0.083	0.085	0.078	0.077	0.074	0.074	0.074
	Frying Pan	37-087-0035	0.079	0.085	0.091	0.094	0.094	0.087	0.085	0.082	0.080	0.075	0.078	0.079
	Purchase Knob	37-087-0036		0.083	0.085	0.090	0.090	0.087	0.087	0.085	0.082	0.078	0.076	0.078
	Waynesville	37-087-0004						0.080	0.080	0.079	0.076	0.073	0.069	0.072
Unifour (Hickory)	Waggin Trail (Taylorsville)	37-003-0004	0.076	0.079	0.084	0.086	0.089	0.087	0.091	0.088	0.082	0.077	0.075	0.078
	Lenoir / Caldwell Co.	37-027-0003		0.079	0.088	0.090	0.092	0.087	0.086	0.084	0.080	0.074	0.073	0.076
Triad	Cooleemee	37-059-0002			0.092	0.098	0.098	0.096	0.095	0.093	0.086	0.082	0.079	0.083
	Hattie Ave.	37-067-0022	0.083	0.087	0.091	0.097	0.096	0.094	0.094	0.093	0.087	0.079	0.077	0.079
	Union Cross	37-067-1008	0.088	0.089	0.092	0.094	0.093	0.093	0.092	0.089	0.084	0.079	0.080	0.082
	Shiloh Church	37-067-0028			0.087	0.086	0.088	0.089	0.092	0.088	0.079	0.074	0.072	0.073
	Cherry Grove	37-033-0001	0.085	0.089	0.093	0.094	0.093	0.090	0.091	0.088	0.084	0.077	0.075	0.077
	Mendenhall (McLeansville)	37-081-0013	0.086	0.085	0.088	0.092	0.094	0.090	0.093	0.089	0.084	0.077	0.077	0.082
	Bethany	37-157-0099	0.092	0.090	0.089	0.085	0.083	0.085	0.090	0.091	0.084	0.078	0.075	0.078
	Sophia	37-151-0004								0.085	0.082			
	Pollirosa	37-067-0027	0.078	0.081	0.084	0.084	0.083	0.082	0.084	0.082	0.079			
	Clemmons	37-067-0030											0.076	0.076
Fayetteville	Wade	37-051-0008	0.083	0.084	0.088	0.092	0.093	0.088	0.086	0.086	0.084	0.080	0.076	0.078
	Golfview (Hope Mills)	37-051-1003	0.087	0.087	0.091	0.092	0.091	0.086	0.087	0.087	0.084	0.082	0.080	0.082

Light Shading = No Data Available Underline = Fewer Than Three Years Or Previous Site Data In DV Calculation

1-Hour & 8-Hour Ozone Exceedance Trends

The number of 1-hour ozone exceedances peaked during the 1998 season, in which nine exceedances were observed in the EAC areas. Since 1998, exceedances of the 1-hour standard have decreased dramatically. There have been no exceedances of the 1-hour ozone NAAQS in the last five years (2003-2007) in any EAC area (see Table 8 below).

Table 8: Number of 1-hour ozone exceedances at each monitoring site within an EAC area.

Region	Monitoring Sites	AIRS ID	Number Of 1-Hour Exceedances Per Year													
			1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Mountains	Bent Creek	37-021-0030	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	Frying Pan	37-087-0035	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Purchase Knob	37-087-0036		0	0	0	0	0	0	0	0	0	0	0	0	0
	Waynesville	37-087-0004						0	0	0	0	0	0	0	0	0
Unifour (Hickory)	Waggin Trail (Taylorsville)	37-003-0004	0		0	0	2	0	0	0	0	0	0	0	0	0
	Lenoir / Caldwell Co.	37-027-0003		0		0	0	0	0	0	0	0	0	0	0	0
Triad	Cooleemee	37-059-0002			0	0	1	2	0	1	0	0	0	0	0	0
	Hattie Ave.	37-067-0022	0	1	0	0	1	1	0	0	0	0	0	0	0	0
	Union Cross	37-067-1008	0	0	0	0	1	0	0	0	1	0	0	0	0	0
	Shiloh Church	37-067-0028			1	0	1	1	0	0	0	0	0	0	0	0
	Cherry Grove	37-033-0001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mendenhall (McLeansville)	37-081-0013	0	0	1	0	0	0	0	0	2	0	0	0	0	0
	Bethany	37-157-0099	0	0	0	0	1	0	0	0	2	0	0	0	0	0
	Sophia	37-151-0004								0	0	0	0			
	Pollirosa	37-067-0027	0	0	0	0	1	0	0	0	0	0	0			
	Clemmons	37-067-0030												0	0	0
Fayetteville	Wade	37-051-0008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Golfview (Hope Mills)	37-051-1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Light Shading = No Data Available																

Note: Light shading indicates that no data was available for the period.

The number of 8-hour ozone exceedances has shown a downward trend since peaking in 1998 and 1999 for all EAC areas (see Table 9 below). In the Mountain EAC area, there have been only three exceedances since 2003, one in 2005, one in 2006, and one in 2007. In the Unifour region, there have been no exceedances in the past 4 years, and in 2003, the maximum number of exceedances at any monitor was three. In the Triad area, in 2003, the Hattie Avenue monitor had five exceedances, and the Cooleemee monitor had four exceedances, with less than four exceedances elsewhere in the Triad. In 2004, 2005, and 2006 no monitor has had more than three exceedances. In 2007, the Cooleemee and Mendenhall monitors each experienced four exceedances, with two or less exceedances at the other monitors in the Triad. In the Fayetteville region, the maximum number of exceedances at a monitor in 2003 was four. In 2004, no exceedances were recorded. In 2005, the maximum number of ozone exceedances at any monitor rose to eight. There were no exceedances in 2006. There were two exceedances in 2007 at the Wade monitor. All in all, there has not been another year like 2002 with widespread exceedances.

Table 9: Number of 8-hour ozone exceedances at each monitoring site for each EAC area.

Region	Monitoring Sites	AIRS ID	Number Of 8-Hour Exceedances Per Year													
			1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Mountains	Bent Creek	37-021-0030	0	0	0	0	5	2	7	1	7	0	0	1	0	0
	Frying Pan	37-087-0035	0	5	5	4	23	24	4	1	13	0	0	0	1	1
	Purchase Knob	37-087-0036		4	1	7	12	19	5	0	18	0	0	0	0	0
	Waynesville	37-087-0004						1	3	0	2	0	0	0	0	0
Unifour (Hickory)	Waggin Trail (Taylorsville)	37-003-0004	1		0	3	15	2	7	5	17	1	0	0	0	0
	Lenoir / Caldwell Co.	37-027-0003		1		1	10	18	4	2	10	3	0	0	0	0
Triad	Cooleemee	37-059-0002			3	11	18	24	17	11	22	4	0	3	1	4
	Hattie Ave.	37-067-0022	2	8	3	9	15	16	6	10	15	5	0	0	2	2
	Union Cross	37-067-1008	4	4	5	12	18	11	9	8	15	3	0	0	3	2
	Shiloh Church	37-067-0028			4	1	9	6	5	10	8	0	0	0	0	0
	Cherry Grove	37-033-0001	3	4	7	17	19	7	9	6	15	3	0	0	0	1
	Mendenhall (McLeansville)	37-081-0013	5	5	3	3	18	18	8	4	20	2	0	3	2	4
	Bethany	37-157-0099	8	0	6	11	5	2	3	9	15	3	0	0	0	1
	Sophia	37-151-0004								7	10	2	1			
	Pollirosa	37-067-0027	1	1	3	1	6	3	1	2	6	0	0			
	Clemmons	37-067-0030												0	0	1
Fayetteville	Wade	37-051-0008	3	3	4	5	13	17	4	2	17	4	0	3	0	2
	Golfview (Hope Mills)	37-051-1003	4	4	9	4	24	14	3	3	14	3	0	8	0	0

Light Shading = No Data Available Orange - 4 Or More Exceedances

Note: Light shading indicates that no data was available for the period. Orange highlighting indicates a monitor with four or more exceedances for that year.

4th Highest Value Trends

The design value is calculated by averaging the 4th highest 8-hour ozone value for each of three years. Since the design value is an average of three years, a decrease may be the result of one really good air quality year; or conversely, a in crease may be the result of one bad air quality year. Therefore, looking at the trends of the 4th highest value can give insight as to how the air quality in an area is improving. Table 10 shows the 4th highest 8-hour ozone values for each monitoring site within each EAC area. As can be seen from the data, 2002 was a year in which high ozone was observed throughout the EAC areas where all but one monitor had a 4th highest value greater than the standard. Since 2002, there have been very few monitors where the 4th highest value was above the 8-hour ozone standard. During the 2006 ozone season, all of the monitors in EAC areas had 4th highest values below the 8-hour ozone standard. Two monitors in the Triad, Cooleemee and Mendenhall, had 4th highest values above the 8-hour ozone standard in 2007.

Table 10: 4th Highest 8-hour ozone value at each monitoring site within an EAC area

Region	Monitoring Sites	4th Highest 8-Hour Ozone Values (ppm)													
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Triad	Cooleemee			0.084	0.092	0.102	0.100	0.094	0.094	0.098	0.089	0.073	0.084	0.080	0.085
	Hattie Ave.	0.081	0.090	0.080	0.093	0.100	0.099	0.090	0.094	0.099	0.087	0.075	0.074	0.082	0.082
	Union Cross	0.088	0.086	0.091	0.092	0.095	0.096	0.089	0.094	0.093	0.081	0.078	0.080	0.083	0.083
	Shiloh Church			0.088	0.079	0.094	0.086	0.086	0.096	0.094	0.074	0.071	0.078	0.067	0.076
	Cherry Grove	0.083	0.086	0.088	0.095	0.096	0.091	0.092	0.087	0.095	0.083	0.074	0.076	0.075	0.082
	McLeansville	0.086	0.089	0.084	0.084	0.097	0.096	0.089	0.086	0.104	0.079	0.071	0.081		
	Mendenhall												0.082	0.080	0.086
	Bethany	0.093	0.073	0.092	0.089	0.087	0.081	0.082	0.094	0.096	0.083	0.074	0.078	0.075	0.082
	Sophia								0.085	0.092	0.078	0.076			
	Pollirosa	0.072	0.080	0.082	0.083	0.087	0.082	0.082	0.082	0.088	0.078	0.072			
	Clemmons												0.075	0.077	0.078
Mountain	Bent Creek	0.069	0.076	0.074	0.075	0.090	0.084	0.090	0.076	0.090	0.070	0.073	0.079	0.071	0.073
	Frying Pan	0.066	0.085	0.086	0.085	0.102	0.096	0.085	0.081	0.090	0.077	0.073	0.082	0.079	0.077
	Purchase Knob		0.085	0.078	0.087	0.092	0.093	0.087	0.082	0.094	0.081	0.071	0.084	0.073	0.077
	Waynesville						0.082	0.083	0.075	0.084	0.079	0.066	0.074	0.069	0.074
Cumberland	Wade	0.084	0.081	0.086	0.085	0.093	0.100	0.086	0.080	0.094	0.086	0.072	0.084	0.072	0.080
	Golfview (Hope Mills)	0.085	0.087	0.091	0.085	0.098	0.093	0.083	0.084	0.095	0.082	0.077	0.091	0.074	0.082
Unifour	Waggin Trail	0.075		0.078	0.080	0.096	0.082	0.091	0.088	0.095	0.081	0.071	0.080	0.076	0.080
	Lenoir / Caldwell Co.		0.079		0.079	0.098	0.094	0.085	0.082	0.092	0.079	0.070	0.075	0.076	0.077

Light Shading = No Data Available Orange - Exceedance of the standard

Figure 3 displays the maximum 4th highest 8-hour ozone values for each EAC area. Although there can be a great deal of fluctuation in the 4th highest value, the general trend since 2002 has been downward. There was an increase in these values from 2004 to 2005, however the 2005 levels were still significantly lower than the 2002 values. This downward trend continued with the 2006 data.

In 2007, the Mountain area continued the downward trend, whereas the other three areas show a slight increase, but slightly below 2005 levels and well below 2002 levels.

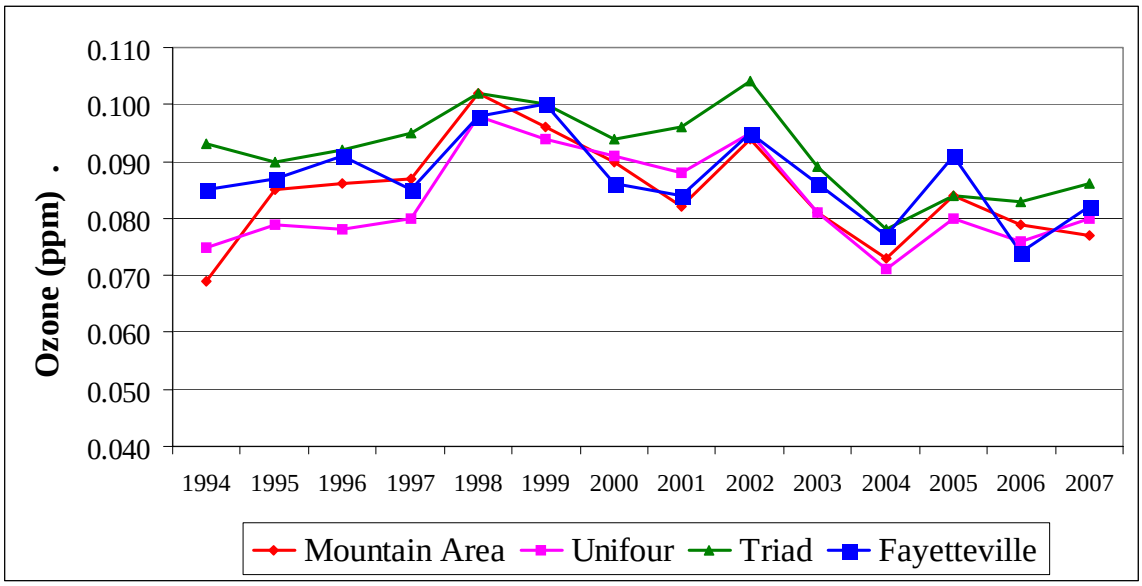


Figure 3. The graph displays the trend in the area-wide maximum 4th highest 8-hour ozone value in parts per million for each EAC area from 1994-2006.

2007 Ozone Season Weather Patterns

Weather conditions during the 2007 ozone season were very conducive to ozone formation. Temperatures were above normal, with August being the hottest month on record. Precipitation was well below normal, with the May-September period being one of the driest on record. Drought conditions developed by early July, and by the end of the summer much of the State was deemed to be in an 'exceptional' drought, the most severe category. The entire summer could be characterized as favorable for ozone formation, and many major metropolitan areas throughout the southeast experienced the highest number of days with ozone above the 8-hour ozone NAAQS since 2002. Only two EAC areas had exceedances of the standard, the Triad EAC had a total of seven days above the NAAQS, while the Fayetteville EAC had two days above the NAAQS.

Much of the State entered the ozone season with dry conditions, which in the past has been favorable for having multiple days with ozone above the NAAQS. Both May and June had near to slightly above normal temperatures (Figs 4a and 5a). More noteworthy were the dry conditions experienced during both months (Figs 4b and 5b). The lack of rain (and associated lack of clouds) led to a relatively active photochemical period. Many major metropolitan areas throughout the southeast experienced multiple days with ozone above the 8-hour ozone NAAQS. The North Carolina EAC areas faired well, with two 8-hour ozone exceedances in the Triad EAC area and only one in the Fayetteville EAC.

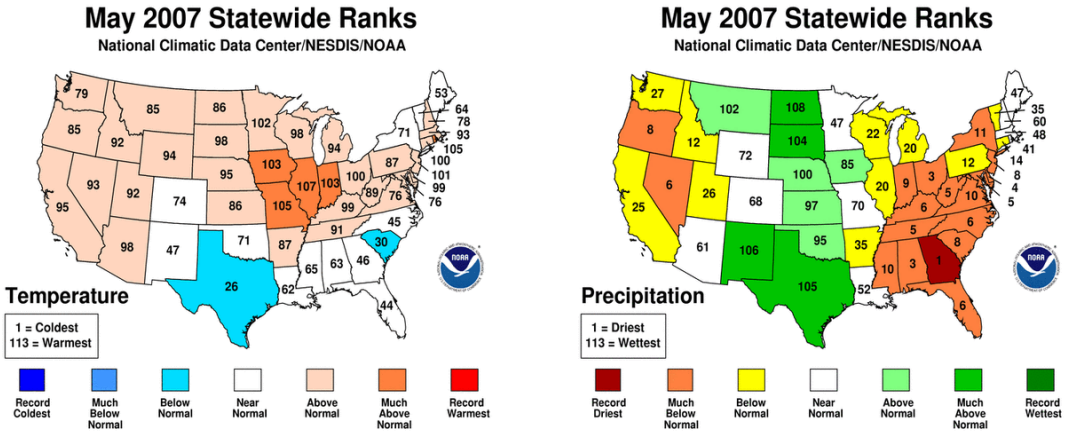


Figure 4a-b. Statewide annual climate rankings for 2007 for temperature (left, a) and precipitation (right, b) for May. (Source: NCDC/NESDIS/NOAA)

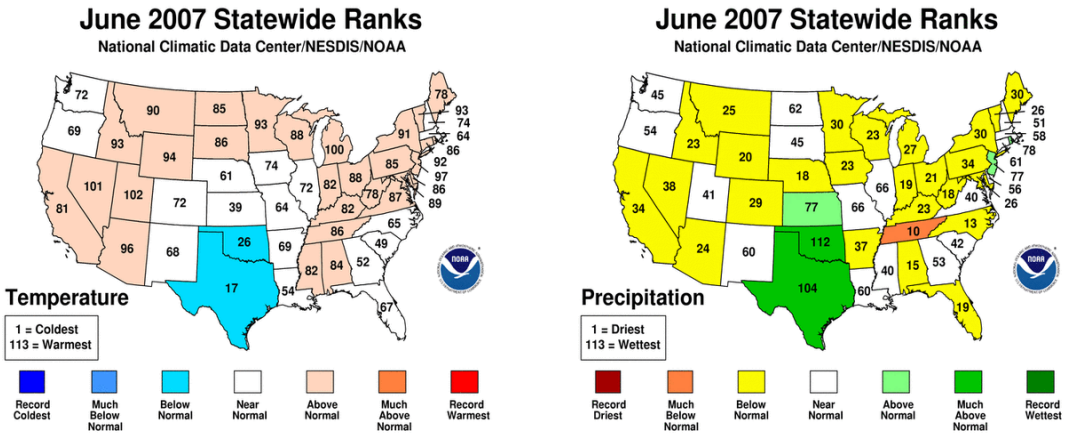


Figure 5a-b. Statewide annual climate rankings for 2007 for temperature (left, a) and precipitation (right, b) for June. (Source: NCDC/NESDIS/NOAA)

During the month of July, a trough set up over the eastern United States. Temperatures were cooler and though rainfall remained low, there was a bit more cloud cover (Figs 6a-b). No exceedances were recorded in July anywhere in North Carolina. The pattern shifted during August into early September with a stacked ridge of high pressure locked over the eastern United States. August was the warmest and second driest month ever recorded in North Carolina and much the southeastern United States (Figs 7a and 8a). During this period, most major metropolitan areas in the southeastern United States experienced numerous days with 8-hour ozone exceeding the NAAQS, with a couple of days well above the NAAQS. The Triad EAC had five days above the 8-hour ozone NAAQS. Remarkably, the Fayetteville EAC had only one day with ozone above the 8-hour ozone NAAQS.

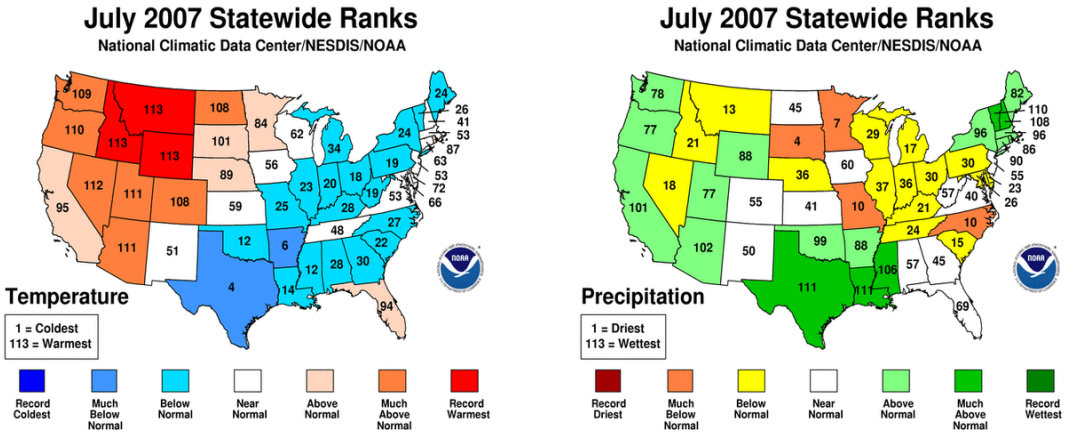


Figure 6a-b. Statewide annual climate rankings for 2007 for temperature (left, a) and precipitation (right, b) for July. (Source: NCDC/NESDIS/NOAA)

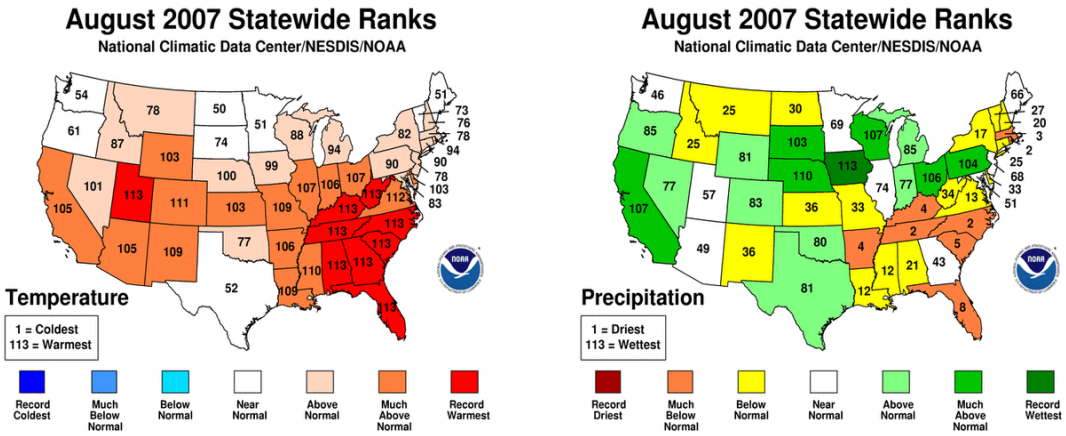


Figure 7a-b. Statewide annual climate rankings for 2007 for temperature (left, a) and precipitation (right, b) for August. (Source: NCDC/NESDIS/NOAA)

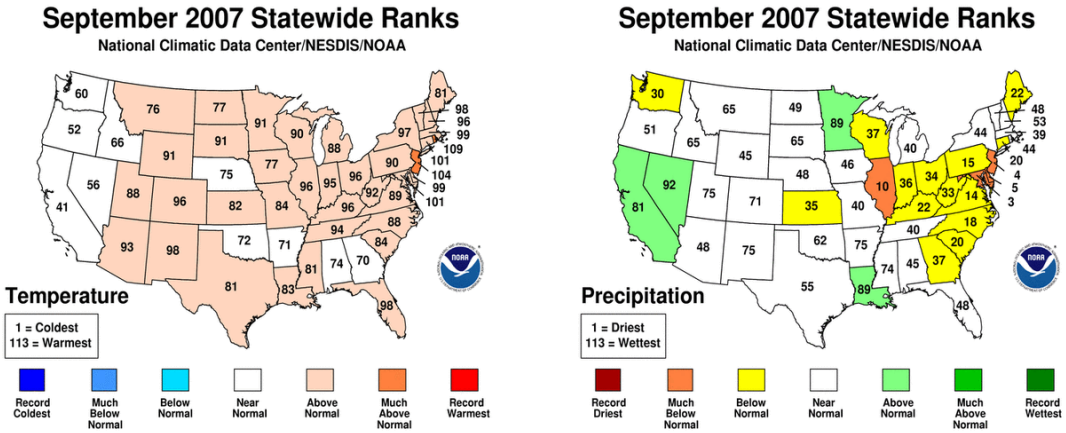


Figure 8a-b. Statewide annual climate rankings for 2007 for temperature (left, a) and precipitation (right, b) for September. (Source: NCDC/NESDIS/NOAA)

IV. Overall Summary and Conclusions

The annual review of stationary point source emissions shows North Carolina EAC areas experienced fairly significant NOx decreases for the period evaluated. However, this period was perhaps the most favorable period for ozone formation in the last several years. Two individual counties within EAC areas, Madison County, in the Mountain EAC area, and Yadkin County, in the Triad EAC area, reported NOx emissions from stationary point sources at levels high enough to meet one of the two action triggers. However, the additional amount of NOx added to each of the EAC areas as a whole was very small and the overall EAC areas saw a significant decrease in NOx emissions. The 3-year 8-hour ozone design values for four EAC counties increased slightly. However, NOx emissions decreased in

those counties from that used in the EAC SIP modeling analysis for the individual counties, as well as, for the EAC area as a whole. Therefore, the NCDAQ does not believe further action is needed at this time.

The annual review of the average annual VMT growth rate comparison between the VMT used in the EAC SIP and the latest data from the NCDOT shows that the average annual growth rates for the EAC areas have decreased.

The 3-year 8-hour ozone design values increased slightly since the NCDAQ submitted the EAC Tracking Report in December 2006. However, this period was perhaps the most favorable period for ozone formation in the last several years. The air quality in the EAC areas have improved considerably since the designations and all of North Carolina's EAC areas met the 8-hour ozone NAAQS with the 2003-2005 design value period, two years earlier than they were required. Additionally, the stationary point source and highway mobile source growth in all EAC areas were below the action triggers detailed in the EAC SIP. Therefore, the NCDAQ does not believe that additional action is necessary.

Appendices

A-F

A. Unifour Air Quality Committee (UAQC) Minutes (July-Dec)

B. Unifour Air Quality Committee By-Laws

C. Unifour Air Quality Conference Summary and Evaluations

D. Statewide Interagency Consultation

E. Wood Stove Study Summary

F. Assorted Articles Press Releases

Appendix A

MINUTES

UNIFOUR AIR QUALITY OVERSIGHT COMMITTEE (UAQOC)
UNIFOUR AIR QUALITY COMMITTEE (UAQC)
WPCOG OFFICES

TUESDAY, August 28, 2007 @ 10:00 AM

UAQOC Members Present:

Maynard Taylor, Vice Chair, Burke County
Johnny Brown, Conover

UAQOC Members Absent:

Kitty Barnes, Chair, Catawba County
Guy Barriger, Taylorsville
John Cantrell, Morganton
Larry Yoder, Alexander Co.
Bruce Meisner, Hickory
Dr. Marjorie Strawn, Lenoir
Dr. John Thuss, Caldwell County

UAQC Members Present:

John Tippett, WPCOG
Doug Urland, Catawba County
Mark Hawes, Shurtape
Ed Neill, Neill Grading & Construction
Bill Sale, Broyhill Furn.
Chuck Beatty, Lenoir
Mike Lane, Caldwell County
Tom Reese, Hickory Printing

UAQC Members Absent:

Jacky Eubanks, Vice Chair, Catawba County
Mick Berry, Hickory
Sharon Ward, HBF
Ron Lewis, Burke County
Glenn Pattishall, Newton
Tom Lundy, Catawba County
Kenyon Kelly, CVHA
Jon Pilkenton, Taylorsville
Bill Duquette, Caldwell County
Lance Hight, Conover
Dale Meyer, Burke County
Donald Duncan, Conover
Ron George, Morganton
Jay Adams, ACRES
Sylvia Turnmire, Alexander County
Seth Harris, Alexander County

Others Present:
Doug Taylor, WPCOG
Tony Gallegos, WPCOG
Taylor Dellinger, WPCOG
Johnny Wear, WPCOG
Laura Boothe, NC DAQ (phone)

Vice-Chair Maynard Taylor called the meeting to order at 10:00 AM; everyone was welcomed to the meeting and introductions were made. Mr. Taylor called for a motion to approve the minutes from the June 26, 2007 meeting. Bill Sale was left off of the list of those attended. Doug Urland moved that the minutes be approved. The motion was seconded and it carried by a unanimous vote.

Agenda Item V was an update on changes in legislature that affect air quality. The item was moved up on the agenda. Laura Boothe with NC DAQ joined the meeting via speakerphone and outlined the new legislative changes to the group. With regards to HB 1912, the School Retrofit Pilot Program, Ms. Boothe said that a list of eligible buses is being decided upon by staff, and that discussion was ongoing on how much money will be available. SB 3 is a renewable energy and energy efficiency bill that will require a growing percent of NC energy sales to be renewable at least 12.5 % by 2021. Consumers were taken into account with a cap on the annual increase for residential consumers. HB 679 dealt with vehicle inspections, with the intent of aligning inspections and registration so that the inspection must be done before the registration can be renewed. SB 509 is a bill that lowers that penalty fee for failure to get a vehicle inspected. Doug Urland asked is Catawba County will be eligible for HB 1912. Boothe said that the county would be.

Agenda Item IV was an EAC Biannual Progress Report by Tony Gallegos. Mr. Gallegos said that copies of the report went out at the end of June. Mr. Gallegos said that the report was a means to collect the local control measure in the Unifour, and then read

the 14 measures that needed to be taken. The data will have to be compiled, and added to the final report that is due in December.

Agenda Item VI was an overview of the new UAQC/UAQOC bylaws by John Tippett and Johnny Wear. John Tippett described that since the Committees were originally going to function for an indefinite period, there was no reason to have by-laws, but with air quality issues remaining, it looks as if the Committees will continue to operate. Tippett pointed out that the by-laws were written to include both committees in one document, but could easily be separated into two different sets of by-laws if necessary. Tippett also mentioned that the membership requirements needed to be discussed. The group decided that the UAQC could have no more than two representatives from local governments, and that representation from industry could not be any greater than a 50:50 ratio with local government representation. Johnny Wear then summarized the by-laws for the group. The default meeting time was discussed, with most of the group able to come on the third Tuesday of the month. It was decided that a survey of the members by email would be required to decide on a date. It was decided that 30% of the total membership for both or either committee would be required for a quorum.

Agenda Item VII was a summary of the Catawba Chamber Energy Conservation Conference by Taylor Dellinger. Mr. Dellinger attended the conference on August 15. Mr. Dellinger said that the film “Kilowatt Ours” was shown. The film, which was about energy efficiency, made comparisons before and after different energy efficiency tactics were employed with respect to costs. There were also several speakers that consult

businesses on energy efficiency. Mr. Dellinger said that there were many practical solutions shown that reduce energy costs.

Agenda Item VIII was a summary of the NC Biodiesel workshop by Johnny Wear. Mr. Wear attended the workshop on August 15th in Dallas, NC at the new BioNetwork BioEd Center at Gaston College. Mr. Wear said that the information was highly intensive in the field of chemistry, and that speakers included representatives from the National Biodiesel Board, Piedmont Biofuels, and the BioNetwork BioBusiness Center. These speakers presented a wealth of information on standards, storing, and production of biodiesel.

Agenda Item IX was an update by Taylor Dellinger on the PM2.5 and ozone monitor readings. Mr. Dellinger said that the Charlotte Region saw a Code Purple last week. Neither monitor exceeded the current standard (0.85 ppm) in August, but both monitors were close (Alexander 0.84 ppm and Caldwell site 0.77 ppm). Mr. Dellinger noted that if the standard is lowered by EPA in March to 0.75 ppm or lower, both monitors would be in violation based on the three-year averages. The State will be making recommendations based on 2007 and 2008 data sometime in 2008 or 2009.

Agenda Item X was an update of the upcoming Hickory Metro NC Solar Tour to be held on October 6, 2007 by Tony Gallegos. Mr. Gallegos said that the tour will be highlighting energy efficiency and alternative energy. They will begin by showing

“Kilowatt Ours” and then start the tour. They are partnering with Habitat for Humanity on the project.

Agenda Item XI was an Update on Air Quality Activities within the Region by all members. The group discussed the fire at Foothills Biofuels. There was minimal damage, and the facility was up and running again in just a few days. The group was also reminded to report any exceptional events to COG staff, and discussed the effects of Fourth of July fireworks on PM2.5 monitors.

With no further business the meeting was adjourned at 11:20 a.m.

Respectfully submitted,

John E. Wear III

MINUTES

UNIFOUR AIR QUALITY OVERSIGHT COMMITTEE (UAQOC)
UNIFOUR AIR QUALITY COMMITTEE (UAQC)
WPCOG OFFICES

TUESDAY, October 16, 2007 @ 10:00 AM

UAQOC Members Present:

Kitty Barnes, Chair, Catawba County
Maynard Taylor, Vice Chair, Burke County
Dr. John Thuss, Caldwell County

UAQOC Members Absent:

Johnny Brown, Conover
Dr. Marjorie Strawn, Lenoir
Guy Barriger, Taylorsville
John Cantrell, Morganton
Larry Yoder, Alexander Co.
Bruce Meisner, Hickory

UAQC Members Present:

John Tippett, WPCOG
Tom Lundy, Catawba County
Lance Hight, Conover
Seth Harris, Alexander County
Bill Sale, Broyhill Furn.
Tom Reese, Hickory Printing
Cal Overby, City of Hickory

UAQC Members Absent:

Jacky Eubanks, Vice Chair, Catawba County
Doug Urland, Catawba County
Mark Hawes, Shurtape
Ed Neill, Neill Grading & Construction
Mick Berry, Hickory
Sharon Ward, HBF
Ron Lewis, Burke County
Glenn Pattishall, Newton
Chuck Beatty, Lenoir
Kenyon Kelly, CVHA
Jon Pilkenton, Taylorsville
Bill Duquette, Caldwell County
Mike Lane, Caldwell County
Dale Meyer, Burke County
Donald Duncan, Conover
Ron George, Morganton
Jay Adams, ACRES
Sylvia Turnmire, Alexander County

Others Present:
Tony Gallegos, WPCOG
Taylor Dellinger, WPCOG
Johnny Wear, WPCOG
Laura Moody, Cong. McHenry's Office
Dave McCrary, Cong. McHenry Office

Chair Kitty Barnes called the meeting to order at 10:00 AM; everyone was welcomed to the meeting and introductions were made. Mrs. Barnes called for a motion to approve the minutes from the August 28, 2007 meeting. Maynard Taylor moved that the minutes be approved. The motion was seconded by John Thuss and it carried by a unanimous vote.

Agenda Item IV was consideration of a final draft of the UAQC/UAQOC bylaws by John Tippett and Johnny Wear. John Tippett pointed out that the by-laws were written to include both committees in one document, but could easily be separated into two different sets of by-laws if necessary. The group decided that the Mission Statement should be revised to emphasize cooperation and input between the public sector and business and industry. They also decided that the by-laws should state that there shall be no more than two representatives from any local government entity. Staff said that they would make the changes to the by-laws and email a copy of the revised to the UAQC/UAQOC members before the November meeting.

Agenda Item V was an update by Taylor Dellinger on the PM2.5 and ozone monitor readings. Mr. Dellinger said that region had gone through the ozone season with no violations for the year, though it was close several times. Based on the current (2005-2007) three-year average, the region should be declared in attainment for ozone in April 2008. Mr. Dellinger also noted that PM 2.5 levels at the water tower monitor have run about 5% lower in 2007 than in 2006.

Agenda Item VI was the final EAC Biannual Progress Report by Tony Gallegos. Mr. Gallegos said that a letter was received, dated September 28 from USEPA, commending us and other EAC areas for achieving the goals thus far. On the last page

it mentions that the region has met all of EAC milestones. All documentation for the final EAC report will be submitted by December 31st, and we should be in attainment by April 15, 2008.

Agenda Item VII was a legislative update by Johnny Wear on a biofuels bill, specifically, Senate Bill 1272. The law exempts biodiesel produced by an individual, for use in their own private vehicle, from the motor fuel excise tax. Similar legislation has been passed by Illinois, Texas, Rhode Island, and Indiana. The act became effective October 1, 2007.

Agenda Item VIII was information on the NC DAQ Mobile Emission Grants. The purpose of the grant is to reduce on- and off- road mobile source related emissions, and can be used for things such as School bus Retrofits, biodiesel storage tanks and infrastructure, alternative fueled vehicles, and retrofits and repowering of heavy duty diesel tracks and equipment. The deadline for proposals is December 31, 2007.

Agenda Item IX was an update on Clean Fuels Coalition Activities by Johnny Wear. Mr. Wear provided information on biodiesel and locations of Biofuels retail locations in NC to the group for informational purposes. He then described some recent activities of the Coalition and provided the group with the Clean Fuels Coalition Action Plan for 2007, as well as their Marketing and Publicity Plan in hopes that it may stimulate some ideas for the UAQOC\UAQC.

Agenda Item X was a summary of the Hickory Metro NC Solar Tour held on October 6, 2007 by Tony Gallegos. Mr. Gallegos said that the tour highlighted energy efficiency and alternative energy. There were 40 people in attendance, and the tour lasted from 8 AM until after 5 PM. There were representatives from Habitat for Humanity, Go-Green Hickory, the Sierra Club, and NC DAQ. DAQ Staff presented their "Change of Light" program, Caldwell Community College had a presentation on wind and solar power. There was also a stop at the Cubbard Express on US Highway 321, a tour of the Catawba County landfill and bioenergy center, and a showing of "Kilowatt Ours". This will be an annual event.

Agenda Item XI was a summary of Energy Awareness Month by Tony Gallegos. This month is Energy Awareness Month, a proclamation from Governor Easley. There are lots of workshops across the state and several training opportunities statewide with grants from the Energy Center at NCSU through Cooperative Extension. There has been one workshop in Caldwell County.

Agenda Item XII was an Update on Air Quality Activities within the region by all members. John Thuss stated that Caldwell County is building a rail off-load facility. This could remove truck traffic along US Highway 321 near the water tower PM 2.5 monitor.

The next meeting will take place on Tuesday November 20th.

With no further business the meeting was adjourned at 11:10 a.m.

Respectfully submitted,

John E. Wear III

AGENDA
JOINT MEETING of the
UNIFOUR AIR QUALITY COMMITTEE (UAQC) and UNIFOUR AIR QUALITY OVERSIGHT COMMITTEE (UAQOC)
TUESDAY, NOVEMBER 20, 2007
10:00 a.m. @ WPCOG OFFICES
736 4th Street SW
Hickory, North Carolina

I. Call to Order – Kitty Barnes, Chair UAQOC

II. Welcome and Introductions – Kitty Barnes

III. Approval of UAQC Minutes of October 16, 2007 Meeting (Attached)

IV. Consideration of-UAQC/UAQOC By-Laws (Johnny Wear & John Tippett) (Attached)

V. UAQC Legal Issues (Charles Case via Telephone)

VI. National Association of Manufacturers Resolution to Maintain Current Ozone Standards (Kitty Barnes) (Attached)

VII. Update of Latest Ozone and PM 2.5 Monitor Readings (Taylor Dellinger)

VIII. NCDAQ Stakeholders Meeting for Catawba County PM 2.5 SIP (State Implementation Plan) development (Johnny Wear)

IX. New pollution measures at the Marshall Steam Station (Thomas Rawe-Duke Energy)

X. Final EAC Biannual Progress Report (Taylor Dellinger)

XI. Discussion of UAQOC/UAQOC elections to be held in January 2008 (Kitty Barnes)

XII. Update on Air Quality Activities within the Region – UAQC Members

XIII. Other Business

XIV. Next UAQC/UAQOC Joint Meeting?

XV. Adjournment

Appendix B

Draft

Unifour Air Quality Committee (UAQC)
Unifour Air Quality Oversight Committee (UAQOC)

Procedural By-Laws

1. Overview

In January 1999 the WPCOG learned that Unifour Region's ozone levels would violate the new EPA 8-Hour Standard. The following spring and summer public meetings were held with local governments, the North Carolina Division of Air Quality, Economic Development Corporations, Chambers of Commerce and other interested groups. In November 1999 the Catawba Air Quality Committee (CAQC) was formed. During the next four years the CAQC was expanded to include other regional members to form the Unifour Air Quality Coalition. The coalition eventually evolved into more formal Unifour Air Quality Committee (UAQC) and the Unifour Air Quality Oversight Committee (UAQOC) which is made up of stakeholders and elected officials from throughout the region.

The UAQOC members are comprised of ten elected officials from local governments. The UAQC is made up of representatives of private organizations or individuals within the Unifour region. The UAQC and UAQOC meet monthly and are committed to improving air quality in the region through various strategies. Measures already taken include:

Unifour Early Action Compact (EAC) - In December 2002 the UAQC/UAQOC assisted in agreement between Federal, State, and Local governments to address ozone pollution in a more expedient manner than what is required in the Clean Air Act through an Early Action Compact (EAC). The Unifour EAC has been recognized by the US Environmental Protection Agency (US EPA) as one of the most successful programs in the United States. More importantly, the EAC measures appear to working, as all ozone monitors in the area have had no violations in the past three years.

Hiring Technical Consultants - The UAQC/UAQOC gets assistance from consultants to provide guidance and expertise to the committee. For example, the UAQC/UAQOC commissioned a study with the Louis Berger Group to determine the local and regional sources of PM 2.5 in the Unifour Area.

Air Awareness Programs - UAQC/UAQOC members participate in "Ozone Action Plans" that includes provisions to reduce ozone formation.

Centralina Clean Fuels Coalition - The UAQC/UAQOC is a stakeholder in the coalition based at the Centralina Council of Governments in Charlotte.

Educating the Public through Events - The UAQC/UAQOC held a Unifour Air Quality Conference in June of 2007, and plans to continue to hold it annually to educate the public, as well as to gather information in a public forum.

Educating the Public through Literature - The UAQC/UAQOC also produced literature in the form of an Air Quality brochure that covers multiple aspects of air quality, and has been distributed widely across the Unifour.

2. Mission Statement

The following Mission Statement guides activities of the Unifour Air Quality Committee (UAQC) and the Unifour Air Quality Oversight Committee (UAQOC).

Air Quality Mission Statement

"The UAQC and UAQOC Regional Air Quality program strives to improve air quality by working through partnerships with business, industry, and other stakeholders and working cooperatively with local, state and federal governments."

3. Purposes and Goals

The UAQC/UAQOC is established for the following purposes and goals:

- Develop action plans and priorities for improving air quality.
- Encourage local governments and private companies to follow guidelines of their Ozone Action Plans.
- Gather information and educate the public on the effects of air quality on human health.
- Encourage the use of alternative fuels in the region.
- Implement commitments made in the Early Action Compact.
- Host specialized events and workshops that educate the public about different aspects of air quality.
- Participate in legislative lobbying and educational efforts at federal, state and local levels.
- Produce literature that is made available to the public for education of air quality issues.
- Keep track of studies, analyses, technological developments and current events relevant to UAQC/UAQOC policies and programs.

The UAQC/UAQOC serves the 28 local governments in the Unifour region, including Alexander County, Burke County, Caldwell County, and Catawba County, and the 24 municipalities within these counties.

4. General Membership Requirements

Members of the UAQOC and UAQC are individuals and representatives that support and positively effect achievement of the mission, purposes, and goals articulated in Article 2 of these bylaws

The Unifour Air Quality Oversight Committee (UAQOC) members are comprised of ten elected officials from Alexander County, Town of Taylorsville, Burke County, City of Morganton, Caldwell County, City of Lenoir, Catawba County, City of Conover, City of Hickory, and City of Newton. Each member is appointed by the governing board of their respective government. In addition to the main members of the UAQOC, the Coordinator (See Article 8) will serve as an Ex-Officio (non-voting) member of the UAQOC.

Membership in the UAQC is open to any interested public or private organization or individual within the Unifour region. Members that represent local governments must be appointed by the Governing Board of that local government. There shall be no more than two representatives from any local government.

The positions on the UAQC are intended to include balanced representation from local and state governments, utility representatives, environmental organizations, health-based organizations, educational institutions, business, industry, and members of the general public.

Individuals interested in joining must be nominated by an existing member, and then appointed by the UAQOC. Representatives from the private sector cannot make up more than half of the total membership of the UAQC.

5. Structure

UAQC/UAQOC members work together to achieve the goals outlined in Article 2.

Roles and Responsibilities: The particular responsibilities of members shall include:

- Members shall keep their governing board, agencies, or companies informed of UAQOC\UAQC activities.
- Provide input on the development of plans and priorities, as part of any formal planning processes and in an on-going basis, where appropriate and applicable.
- Constructively voice concerns related to activities or priorities to the Coordinator, UAQOC Chair, or UAQOC Vice-Chair, as appropriate.
- Implement commitments made in the Ozone Action Plans and the EAC.
- Request, attend, and/or help to host specialized events and workshops where applicable and beneficial to the mission and needs.
- Participate in legislative lobbying and educational efforts at federal, state and local levels as allowed.
- Participate in public education activities, where possible.
- Assist in the dissemination of information to Committee members and non-members.
- Encourage the adoption of clean air policies and procedures at your company or agency, where appropriate.
- Routinely attend meetings & events.

The UAQOC functions as the governing body and shall be responsible for developing policies and establishing the budget. The UAQC shall make recommendations on policy and budget items.

Membership of the UAQOC shall not exceed 10 persons, each representing Alexander County, Town of Taylorsville, Burke County, City of Morganton, Caldwell County, City of Lenoir, Catawba County, City of Conover, City of Hickory, and City of Newton.

The Western Piedmont Council of Governments (WPCOG) shall provide staff to carry out the functions listed in Article 8.

6. UAQC/UAQOC Chairs

The UAQOC Chair provides leadership to the UAQOC and the UAQC as a whole.

The UAQC Chair provides leadership to the UAQC.

Appointment and Term of Office: The Chairs of the UAQC/UAQOC are elected by a simple majority vote of the UAQC/UAQOC members. The Chairs shall hold office for terms of two years with an election being held in January of even years. In case of vacancy, the Chair shall be elected by a simple majority vote of a quorum of UAQC/UAQOC members as soon as possible following the resignation.

Roles and Responsibilities: In addition to the responsibilities of the UAQC/UAQOC members, the particular responsibilities of the Chairs shall include:

- Facilitate UAQC/UAQOC meetings.
- Provide input and guidance to the Coordinator on the content and preparation of the agenda and in scheduling UAQC/UAQOC meetings.
- Provide guidance to the Coordinator in the planning for UAQC/UAQOC events.
- Work to actively engage UAQC/UAQOC members in productive discussions and the work of the UAQC/UAQOC.
- Seek volunteers among Core UAQC/UAQOC membership to work on particular projects or workgroups as needed.
- Provide recommendations to the UAQC/UAQOC on particular issues as appropriate.

After a Chair's term expires or the Chair resigns, he or she may remain involved in the UAQC/UAQOC in the position of Past Chair. This is a voluntary position and will encourage continuity and an exchange of information with the new Chair.
A Past Chair's responsibilities include: participate in UAQC/UAQOC events, initiatives, and conferences as needed; provide advice and guidance to the new Chair during a period of transition; provide input and guidance to UAQC/UAQOC on particular projects, if requested.

7. UAQC/UAQOC Vice-Chairs

The UAQOC Vice-Chair assists the UAQOC Chair in leading the UAQC/UAQOC as a whole.

The UAQC Vice-Chair assists the UAQC Chair in leading the UAQC.

Appointment and Term of Office: The Vice-Chairs of the UAQC/UAQOC are elected by a simple majority vote of the UAQC/UAQOC members. The Vice-Chairs shall hold office for terms of two years with an election being held in January of even years. In case of vacancy, the Vice-Chair shall be elected by a simple majority vote of a quorum of UAQC/UAQOC members as soon as possible following the resignation.

Roles and Responsibilities: In addition to the responsibilities of all UAQC/UAQOC members, the particular responsibilities of the Vice-Chair shall include:

- In the absence of the Chair, the Vice-Chair shall perform the duties of the Chair.
- The Vice-Chair may, through arrangement with the Chair and Coordinator and with the approval of the UAQC/UAQOC, assume particular duties of the Chair on a long-term or temporary basis.
- The Vice-Chair shall serve as resource to the Coordinator, as necessary.

8. Administrative Support

Staff and administrative support will be provided by the WPCOG in the form of the UAQC/UAQOC Coordinator (also referred to as "Coordinator"), and at least two other WPCOG staff to act as agents of the Coordinator. The Coordinator shall be the Greater Hickory Metropolitan Planning Organization (GHMPO) Coordinator or designee.

Decisions regarding the composition of administrative support shall be the purview of the Coordinator and the UAQC/UAQOC. Funding for the UAQC/UAQOC activities is provided by the Greater Hickory Metropolitan Planning Organization (GHMPO), the Unifour Rural Planning Organization (URPO), and an assessment of the local governments in the region (based on population).

Coordinator and his designated agents (also referred to as "Staff")
General Description: Staff provides recommendations and guidance to the UAQC/UAQOC members on the long-term and day-to-day operations of the UAQC/UAQOC. Primary responsibility for implementing and coordinating the work of the UAQC/UAQOC rests with the Coordinator.

Roles and Responsibilities of Staff:

- In coordination with the UAQC/UAQOC; develop policies, programs and strategies to achieve goals, including: developing long-range and annual plans; developing strategies to implement goals and plans; and designating priority projects and establishing timelines for implementation.
- Research and report on studies, analyses, technological developments and current events relevant to UAQC/UAQOC policies and programs.
- Evaluate applicability and implications of various federal, state and local laws and other regulatory or policy activities on the UAQC/UAQOC's current operations and future activities.
- Carry-out all work in accordance with the goals and priorities, adjusting activities as appropriate to take advantage of opportunities as they arise.
- Assist members in the identification of potential grant sources to fund project implementation.
- Provide member and public education. Respond to requests for information from members and the public. Conduct educational workshops. Develop appropriate materials such as brochures and public service announcements.

- Develop media contacts and work to increase media coverage of UAQC/UAQOC activities.
- Facilitate member recruitment efforts.
- Facilitate regular UAQC/UAQOC meetings.
- Facilitate communications among membership, including: maintaining membership mailing lists; disseminating information to members.
- Organize, in coordination with the UAQC/UAQOC, meetings of committees and general membership. Specific responsibilities to include collaborating with appropriate persons on the development of meeting agendas, distributing materials in preparation of the meetings, and providing event logistics such as meeting location, audio/visual equipment, and refreshments. Keep minutes at meetings.
- Meet with representatives of federal, state and local regulatory agencies, other divisions/departments, interest groups, consultants, the media and other relevant parties in order to coordinate work and exchange information.
- Represent the UAQC/UAQOC in public or private forums.
- Develop UAQC/UAQOC budget, track budget expenses and provide budget reports to appropriate agencies and others that may require such information.

The principal coordinating office of the UAQC/UAQOC shall be located in the offices of the Western Piedmont Council of Governments, located at 736 Fourth Street SW, Hickory, NC 28602.

9. Meetings

The primary meeting location of the UAQC/UAQOC will be held at the offices of the Western Piedmont Council of Governments. Meetings will be on a regular basis at a time and date determined by the UAQC/UAQOC. Meetings may be cancelled at the discretion of the UAQOC Chair, but shall not occur less frequently than quarterly. The default time for meetings shall be 10:00 AM on the third Tuesday of the month.

Decision of meeting times and locations will typically take place at the end of the previous meeting. Email will be the primary notification mechanism. The agenda for any meeting and previous meeting minutes shall be distributed to UAQC/UAQOC members at least three days prior to the day of the meeting via email.

All decisions in the UAQC/UAQOC will be made by consensus (whenever possible) of those members in attendance at a meeting. If consensus cannot be reached, then the UAQOC will vote on issues as necessary. At any UAQC/UAQOC meeting, attendance by 30% of the total membership is considered a quorum. This percentage applies to individual or joint meetings. Presence of a quorum shall be necessary in order to transact business. However, if such a quorum is not or will not be present at a meeting, representatives entitled to vote, present in person, will have the power to adjourn the meeting, without notice other than announcement at the meeting until a quorum is present.

10. General Provisions

Fiscal Year - The fiscal year of the UAQC/UAQOC shall commence on July 1st and end on June 30th.

Personal Liabilities - The members and officers of the UAQC/UAQOC will not be held personally liable for any debt, liability, or obligation of the UAQC/UAQOC.

Indemnification - To the extent permitted by law, and during good behavior, the UAQC/UAQOC will indemnify and hold harmless any person (or a person representative of any person) who served as UAQC/UAQOC member or other agent of the UAQC/UAQOC against any and all claims and liabilities which may be the subject by reason of such service and against any and all expenses incurred in connection with defense or settlement of any legal or administrative proceeding in which the person acted in good faith and the reasonable belief that the action was in the best interest of the UAQC/UAQOC.

Amendments - These bylaws may be altered, amended, or repealed in whole or in part by consensus of a quorum of the membership at a meeting.

Dissolution - Should dissolution of the UAQC/UAQOC become necessary, upon dissolution, assets shall be distributed back to the Greater Hickory Metropolitan Planning Organization (GHMPO), the Unifour Rural Planning Organization (URPO), and the 28 local governments in the region by percent of what was given by each entity.

Appendix C

Visualization: Unifour Air Quality Conference

- First air quality conference ever held in the Hickory region
- More than 110 attended the conference

SAVE THE DATE FOR THE
UNIFOUR AIR QUALITY CONFERENCE

Unifour Air Quality Conference

Location:
Belk Centrum
Lenoir-Rhyne College
Hickory, NC

Date:
June 7, 2007

Time:
8:30 am -12:00 pm

Continental Breakfast and Registration at 7:45 am

Admission: None. It's free!

Co-Sponsors
The Unifour Air Quality Committee
Western Piedmont Council of Governments
Lenoir-Rhyne's Reese Institute
The Greater Hickory Metropolitan Planning Organization

Dear Stakeholder,

Air Quality is important to economic and human health. Come share in an open exchange of information and ideas to improve air quality in the Unifour Region.

The conference will be held on the Lenoir-Rhyne campus in Hickory, NC in the Belk Centrum Building. Registration begins at 7:45 am. and a Continental Breakfast will be served. The conference itself will begin at 8:30 am and will end at 12:00 pm.

This event is hosted by Lenoir-Rhyne's Reese Institute for the Conservation of Natural Resources.

Breakout sessions will cover topics that include:
- mobile source/transportation/alternative fuels
- air quality and health
- energy conservation/sustainable building
- air quality education/outreach
- permitting/regulatory issues

Online registration begins April 30th. Additional information will be provided shortly.

We hope you will join us on June 7th as we continue to improve air quality in the Unifour!

NC Association of Metropolitan Planning Organizations Conference 2007

Unifour Air Quality Conference

Reese Institute for the Conservation of Natural Resources
Western Piedmont Council of Governments
June 7, 2007 – Lenoir-Rhyne College, Hickory, NC

Meeting Summary

On June 7, 2007 the Reese Institute for the Conservation of Natural Resources and the Western Piedmont Council of Governments hosted a conference on Air Quality at Lenoir-Rhyne College in Hickory, NC. The conference was organized to educate the public, government officials, and the private sector on methods to improve air quality, and to gather information from the group on viable methods of accomplishing these goals. The conference was attended by approximately one hundred people representing local municipalities, local industries, fleet management, transportation groups; biodiesel manufacturers; public health organizations; public education agencies, environmental agencies; State and Federal agencies; and other public and private groups.

Co-sponsors of the Conference included Duke Energy, The Greater Hickory Metropolitan Planning Organization, and the Unifour Air Quality Committee. Duke Energy sponsored breakfast for the attendees.

The Welcome and Plenary sessions of the conference took place in Belk Centrum on the Lenoir Rhyne campus. Breakout sessions took place in other rooms on campus.

The conference began with opening remarks by Dr. John Brzorad, the Director of the Thomas W. Reese Institute for the Conservation of Natural Resources at Lenoir-Rhyne College. Dr. Brzorad welcomed participants to the conference and gave an overview and goals of the Reese Institute. Dr. Brzorad stated environmental needs needed to be balanced with the economic needs of the region. He then gave a description of the conference agenda including logistics and overviews.

Dr. Brzorad was followed by Kitty Barnes, Chairman of the Unifour Air Quality Oversight Committee (UAQOC). Mrs. Barnes explained that the UAQOC and the Unifour Air Quality Committee is made up of stakeholders from the private and public sector that are dedicated to improving air quality in our region. She explained some of the initiatives that the Committees has been involved in.

The **Plenary Session** began at 8:40, and included three speakers:

The first speaker was Sheila Holman, Planning Chief with the North Carolina Division of Air Quality (NC DAQ). Mrs. Holman gave an overview of some of the issues facing the State, including Clean Smoke Stacks and a vehicle inspection program. She also described trends with ozone monitors in the state, and said that all monitors are now in compliance with the exception of the Charlotte area. Finally she described mitigation measures for PM2.5

pollution such as Scrubbers placed on power plants, the use of low sulfur fuels, and school bus anti-idling programs.

The second speaker was Chris Stoneman, a policy advisor with the USEPA at the Research Triangle Park. Mr. Stoneman's presentation included key Clean Air Act dates, including attainment dates for PM2.5 and ozone standards; a clear message that local action is needed; sources of PM2.5, voluntary partnership programs to consider such as the Great American Wood Stove Changeout and the Southeast Diesel Collaborative; upcoming opportunities such as the Clean School Bus USA Grant Program; and upcoming activities to watch such as revised PM2.5 standards and an 8-hour ozone standard review.

The third Speaker was Scott Lane, Director of Planning for the Louis Berger Group in Cary, North Carolina. Mr. Lane gave a review of the final report for the PM2.5 Source Apportionment Study that The Louis Berger Group Inc. was contracted to perform by the UAQC. He reviewed the major findings of the study, as well as the breakdown of the PM2.5 sources, which included the fact that 63% of the sources were unidentified or out-of-state. The remaining 37% was made up of 17% wood smoke and boiler emissions, 6% from Marshall Steam Station, 5% came from assessed point sources within 1.5 miles, and the remainder could be made up from transportation sources; which includes gasoline and diesel, as well as railroad. Mr. Lane then described mitigation efforts as still being a good idea due to changing standards, the area's growth, and because non-local controls may not meet the existing standards. Mr. Lane challenged the participants to assist the UAQC in identifying strategies that comply with the philosophies of mitigation efforts, namely that we will begin with voluntary and educational efforts, and that new mitigation strategies will tie into existing efforts such as those identified in the Early Action Compact for ozone pollution.

John Brzorad then gave instructions on the breakout sessions, and the Plenary session ended at 9:30. A fifteen minute break was allowed while conference attendees made their way to the breakout sessions. Each group was given the task of creating a list of ideas and bringing it back to Belk Centrum to present to all of the other groups. Everyone was also made aware of the evaluation sheet which was to be turned in at the end of the conference.

Breakout sessions began at 9:45. The following is a summary of the recommendations of each breakout session. Ideas documented in each session are limited in scope due to the time allotted. Some of the ideas may not reflect the majority of the participants, but nonetheless are included in the session summary. Similarly, the summary is not intended to capture all of the discussion and ideas held during each session, but major points are reflected in the summary. All groups indicated that more time was needed to continue problem solving.

Breakout Session 1: Air Quality and Health

Air Quality and Health took place in McCrorie Center – Room 213 and was facilitated by Doug Urland, Director of the Catawba County Health Department. This session was designed to promote greater awareness of the air quality issues in the Unifour and the effects of poor air quality on human health. Specific attention was given to ozone and fine particulate matter (PM 2.5) and how all community members can protect themselves and

their families and what we as a community can do to limit environmental exposure on poor air quality days.

Panelists included Dr. Albert J. Osbahr M.D., Director of Occupational Health, Catawba Valley Medical Center; Candace Harrington, MS, NP-C with Hickory Allergy & Asthma Clinic; and Milli Hayman, Environmental Specialist with the North Carolina Division of Air Quality, Raleigh Office.

Ideas for Air Quality and Health:

- Continue to advocate for good science from EPA and DAQ
    - Ensure accurate data and specific information for each county in Unifour area
    - Consultation from experts such as Harvey Jefferies
    - Investigate mercury contribution to PM2.5 and its health effects
- Physician and Provider Education
    - Improve Provider knowledge of air quality issues, effects, and actions
    - Develop educational materials for providers to discuss and give to patients
    - Encourage referrals to specialist for breathing issues
    - Find Physician Champions
        - to educate and advocate air quality issues with other physicians
        - to lend credibility to the issues and actions
        - use Medical Society and hospital medical staff meetings as available to distribute educational info
        - teach/train/educate practice staff as well
    - Use ERs/Urgent Care, when patients request treatments, as teachable moments
    - School Nurses – use 'family action plan' as part of 'individual care plan'
    - Look at school-wide environmental sources and develop a plan – pilot? school contests?
- Regional Involvement

Breakout Session 2: Education and Outreach Doesn't Have to Be "Out-of-Thin-Air"

Education and Outreach took place in McCrorie Center, Room 211, and was facilitated by Dr. John Brzorad, Director of the Thomas W. Reese Institute for the Conservation of Natural Resources at Lenoir-Rhyne College. This session was designed to focus on various approaches to educational and outreach efforts to improve air quality in the region. Panelists presented on efforts they have participated in followed by a discussion on lessons learned; pros and cons and what might work for a given target audience and desired outcome.

Panelists for the session included Jim Rogers, Environmental Specialist with the North Carolina Division of Air Quality, Winston-Salem Office, Lorelei Elkins, Regional Coordinator for Triad Air Awareness, and Keith Bamberger, Information and Communications Specialist with the North Carolina Division of Air Quality, Asheville Office.

Ideas for Education and Outreach:

- Need PR and media in addition to efforts in schools
    - Public Service Announcement
    - Bill Boards
    - Electronic billboards it can be free
- After School Groups
    - DAQ folks can do training
- News Papers
    - Find a champion that will do it for free
- Churches (environmental stewardship)
    - State council of churches
    - Interfaith committee for climate change
- Festivals
    - Can reach different folks
    - Piedmont Wagon
- Push to have kids take school bus
    - Work with PTA: School buses are safer than cars
    - Link GPA to privilege of driving to school
- Awareness of drive-throughs

Breakout Session 3: Energy Conservation/Sustainable Building

Energy Conservation/Sustainable Building took place at the Cromer Center in the Bear's Lair. It was facilitated by Scott Lane, Director of Planning for the Louis Berger Group in Cary, North Carolina.

This session focused on how stationary source methods like LEED-certified building practices and low-impact development (LID) can positively influence energy usage and carbon, ozone precursor, and particulate pollution. The mobile source sector has also seen improvements in operating processes that provide similar benefits by adjusting operating procedures and implementing new technologies to reduce both idling and operating emissions.

Panelists for the session included Charles Davis, Environmental Chemist for the North Carolina Division of Air Quality, Ambient Monitoring Session, Raleigh Office

Ideas for Energy Conservation/Sustainable Building:

- Retrofitting Existing Buildings to be More Energy Efficient
- Encourage Alternative Sources of Energy (Nuclear Power, Biofuels, Solar, both Passive and Active)
- Incentives ($) Including a Rotating Loan Program to Offset the Greater Up-Front Capital Costs of Green Building
- Use Lifecycle Costs Instead of Upfront Capital Costs to Evaluate Projects

- Regulations
- Education/Awareness
- Cheap First!
- Sponsor Home Energy Audits
- Local Programs that emulate the LEED Criteria
- Create Demand for Technology (e.g. Solar)
- Adopt Energy Conservation Policies
- Certificate of Excellence
- Energy Incentives Sponsored by Duke Energy, such as Green Building and Load Management
- Incentives for Retrofit
- Sustainable Land Use Development Policies

Breakout Session 4: Permitting/Regulatory Issues

The Permitting/Regulatory Issues session took place in the Cromer Center, in the Hickory Room, and was facilitated by Mark Hawes, Director of Environment & Safety for Shurtape Technologies/Shuford Mills.

This session focused on the impacts of emissions from industrial stationary sources on fine particulate (PM 2.5) and ozone in the Unifour. The session will also focus on answering questions that industrial sources face in efforts to reduce the emissions of precursors of PM 2.5 and ozone, regulatory requirements that may be faced, and permitting of new sources or modifications to existing sources.

Panelists for the session included Mike Landis, Environmental Regional Supervisor for the North Carolina Division of Air Quality, Mooresville Office.

Ideas for Permitting/Regulatory Issues:

- Focus on Domestic sources such as Wood Stoves
- Where does it stop??? How can UAQC be involved to affect the process?? Legislative Fix – Economic impacts should be considered.
- Standard – Compliance w/ standard & how long until Unifour is back into NA….Recalling the fact that EPA does not need to Designate.
- Why not EACs for PM NAA.
- Provide Incentives for Mobile Sources, Stationary Sources, Domestic…….. Example: Retrofits for Boilers / Wood Stove Buy Out
- Climate Change legislation – affects on Sources/Economy

Breakout Session 5: Transportation, Mobile Sources and Alternative Fuels

The Transportation, Mobile Sources and Alternative Fuels session took place in Belk Centrum and was facilitated by John Tippett, Director of the Greater Hickory Metropolitan Planning Organization, and Planning Director for the Western Piedmont Council of Governments.

This session focused on the impacts of transportation and mobile source emissions on our region's air quality. The role of alternative fuels and potential impacts on particulate matter and ozone levels was also discussed.

Panelists for the session included Randy Dellinger, President of Foothills Biofuels in Lenoir; Mike Abraczinskas, Environmental Engineer for the North Carolina Division of Air Quality in Raleigh; Donald Duncan, Manager for the City of Conover; and Anne Tazewell, Transportation Program Manager at the NC Solar Center.

Ideas for Transportation, Mobile Sources and Alternative Fuels:

- Reach out to smaller trucking companies that serve the Unifour area – they generally have older trucks that could benefit from engine retrofits.
- Explore funding opportunities and tax credits for idle reduction units (approx. $9,500 unit)
- Encourage City of Hickory and NCDOT to install vegetative buffer on US 321 near PM monitor site.
- Promote (market) Compressed Natural Gas station at City of Hickory Public Works facility to the public and private sector.
- Encourage school systems to apply for diesel retrofit grant funds.
- Look to NCMobileCare.org for grant opportunities.
- Promote Hybrid usage.
- Explore implementation of a truck stop electrification program.
- Educate the public and private sector to the use of biofuels. Need superior maintenance program.

Following the breakout session there was a ten minute break to allow attendees to return to Belk Centrum.

The **Closing Session** began at 11:00 AM, and was facilitated by Dr. John Brzorad. Facilitators from each breakout session presented the ideas gathered from their respective session. The ideas were presented via PowerPoint onto a screen onstage. Dr. Brzorad closed the session by thanking the attendees.

Kitty Barnes, Chairman of the UAQOC, wrapped up the Air Quality Conference. Mrs. Barnes thanked the attendees for their participation during the day, as well as Tom Reese, WPCOG staff, and Lenoir-Rhyne. She challenged everyone to move forward and use the information they received to address the air quality needs of the region.

John Tippett, also thanked everyone, and once again asked that everyone fill out their evaluation forms.
Evaluation form results are attached.

Next Steps
The UAQOC and UAQC remain committed to improving air quality in the region. Information and ideas gathered from this conference will be presented to the committees for review. The information will be used to help formulate an action plan for the future.

The Unifour Air Quality Conference
Evaluation and Follow-Up Form Results

1. How would you rate the Conference overall with"1" being low and "5" being high?

Low				High
1	2	3	4	5

Count

1 = (0) 2 = (1) 3 = (8) 4 = (40) 5 = (14) NA = (1)

2. What comments do you have about the conference?

- Very beneficial.
- Several ideas involved protecting the "monitor" vs. protecting public health. Biasing the data would be counter-productive to the big picture. This was only a small part. Overall the conference was very productive – both with an overview of information and new ideas being raised during breakout sessions through brain storming.
- Excellent speakers and resources – great for networking
- Closing session – great overview.
- Not enough time allowed for discussion
- Important timely subject; good concept to get community input.
- Informative and crucial dialog. Need more time in breakout sessions – small group workshop forum.
- Was very good. What kind of feedback will we get back? Get McHenry here at next conference as well as other legislatores. Get high state department head here.
- Good conference!
- Not enough time – needed to double time per session!
- Daylong conference would have provided more time for discussion, and opportunity to have fewer concurrent sessions, thus opportunity to attend more than one topic. – Great mixture of topics and attendees. – Great to have industry represented.
- Great concept and well attended. This said, the breakouts needed more time to hash through the ideas and make recommendations.
- Overall, the conference lacked objectivity – very one-sided – a little too optimistic for the current

status of air and water quality in this nation/community.

- Too rushed – attempted to cover too much in little time. Some of the presenters attempted to paint a pretty façade to hide the ugly truth.

- I think that it is wonderful that LR is stepping out to become an environmental leader in the community.
- Full day, longer breakout sessions.
- It just seemed a little rushed.
- Good start? Need more "citizens" – Both private and industrial. Lots of preaching to the choir today. Need more participation.
- Very well organized. Relevant topics and speakers. Lacking a common cohesiveness or "theme".
- Seek more involvement in the general public. Schedule less concurrent sessions. Possible tour of community.
- Great start! Please don't let energy die. Get contact info – keep people connected. Thank you for taking the initiative to get this started.
- Excellent tempo focus and closure.
- Good first effort. I think I would get more out of a one day conference.
- Excellent format – short presentations
- Encourage more participation from institutional facilities, schools, hospitals, hospitality, etc.
- Very nice. Great location.
- It is great to see a local conference.
- Some of the speakers had timeframes that may have been too short – time for a little more detail (without overwhelming attendees) might be worthwhile.
- Well organized – good speakers – could be longer (especially breakout sessions).
- Good cross reference of source experts and attendees.
- Informative, productive.
- The conference was a great way to draw different audiences together for discussion. I would like to see some formatting changes, but overall it was great.
- Proper forum – I liked this approach.
- An introductory explanation of the purpose of the conference, goals, objectives, etc. should have been provided in greater detail.
- There were several breakout sessions I wanted to attend – it would be nice to spread them out in order to attend more sessions.
- May want to consider 8 hour conference instead of 4 hour.
- Good opportunity for dialog among diverse groups of stakeholders.
- Very well structured – good preparation.
- PowerPoint handouts of presentations.

- Great conference – lets build on the momentum and have some more soon.
- Found interesting, informative, well-organized, and fast paced. Information – online registration
– informative, helpful, and easy to use!
- Informative.
- Great range of speakers and topics!
- Good venue, well attended.
- Use as a learning environment for this region and good information.
- Facilities worked well. Another way to help get this topic out to private sector.
- I received some important information.
- Good speakers.
- Good facility.
- Too fast.
- Good attempt at informing community.
- Facility was exceptional and accessible. Duke Power very gracious and to be commended.
Speakers well above average, content excellent.

Session attended:
Air Quality and Health

3. How would you rate the breakout session you attended with"1" being low and "5" being high?

Low				High
1	2	3	4	5

Count

1 = (0) 2 = (2) 3 = (5) 4 = (9) 5 = (1)

4. What comments do you have about the breakout session you attended?

- Excellent
- Too much discussion on if EPA/DAQ is using "good science". More time should have been used to discuss ways we can identify/help those at risk and how we can implement the wood stove changeout program.
- Good networking – excellent facilitator.
- Not enough time allowed for discussion.
- Good to have interactive session. How to get school kids educated on dangers of diesel – partnering with health care providers.
- Too much info, too little time.
- Not enough time to discuss possible recommendations.
- Dr. Osbahr was very good. Get Harvey Jefferies here.
- More time for breakout sessions.
- Have to be brief and broad – need more specifics/details.

- First speaker too long and left little time for discussion.
- There was too much time spent on panelists giving their presentations and not enough time spent on discussion of the issues.
- It appeared that even though the attendees were supposed to offer suggestions – the panel already had their own suggestions formed.
- The time allotted was not adequate.

Session attended:
Education and Outreach Doesn't Have to Be "Out-of-Thin-Air"

3. How would you rate the breakout session you attended with"1" being low and "5" being high?

	Low			High
	1	2	3	4	5

Count

1 = (0) 2 = (0) 3 = (2) 4 = (6) 5 = (3)

4. What comments do you have about the breakout session you attended?
Session attended:

- In future, have option for more than one session.
- More synergy would have been good – perhaps a community building exercise.
- We could have used more time.
- Got some good discussion/participation
- Good examples that I could use in my county
- We were just getting started with good discussion when the session ended. Might've had more time if we did not have to walk to the session.
- More time – Cite more changes in community/neighborhood individuals.
- Just wish we had more time.
- Covered transportation well. Good insightful questions.
- Need to schedule more time for breakout sessions.

Session attended:
Energy Conservation/Sustainable Building

3. How would you rate the breakout session you attended with"1" being low and "5" being high?

	Low			High
	1	2	3	4	5

Count

1 = (0) 2 = (0) 3 = (2) 4 = (4) 5 = (3)

4. What comments do you have about the breakout session you attended?

- Excellent discussion – great ideas generated.
- Encourage more private sector participation, i.e. architects, engineers, private enterprise decision makers.
- Allow more time for each. Also, spread out so person can attend more than one.
- Needed more time to brainstorm – would have liked to attend other sessions.
- Good presentations
- I think that the perspectives presented at the session were invested. I would have liked to see a more panel led session.

Session attended:
Permitting/Regulatory Issues

3. How would you rate the breakout session you attended with"1" being low and "5" being high?

Low				High
1	2	3	4	5

Count

1 = (0) 2 = (0) 3 = (3) 4 = (6) 5 = (0)

4. What comments do you have about the breakout session you attended?

- Would have liked to have seen more participation from industrial facilities.
- A more structured agenda would have facilitated a more focused outcome.
- I would have preferred a more formal presentation because I am not as familiar with the technical forms mentioned in the Q & A.
- Very informative.
- The almost even number of regulatory, local government and industry was very beneficial.
- Good discussion. No clear role as to what the State of NC is actively doing to reduce pollutants.

Session attended:
Transportation, Mobile Sources and Alternative Fuels

3. How would you rate the breakout session you attended with"1" being low and "5" being high?

Low				High
1	2	3	4	5

Count

1 = (0) 2 = (0) 3 = (1) 4 = (9) 5 = (7)

4. What comments do you have about the breakout session you attended?

- Did not discuss in greater detail advantages and disadvantages of each fuel and costs.
- Very informative – good information.
- Possibly need more time for open discussion (felt rushed at end) – topics not fully explored for additional ideas – suggestions.
- Interesting.
- I wish there could have been more interaction from the audience.
- Good – could have used more audience participation.
- Communicate often with smaller companies as well as large.
- Ask speakers to provide handout/summary of presentation/key message for take home.
- Good general discussion.
- Provide more information on "how to" besides what to do and starting up a biodiesel plant.
- Very good information.
- Excellent speakers, good audience interaction, room is extremely cold.
- John did a good job facilitating. Panelists were helpful/knowledgeable.
- Good attempt at interaction, need to expand on ideas and give sessions more time.
- Speakers representative of subject and very knowledgeable.

5. Would you come to this conference again next year? Yes = 62 No = 0 NA= 2

6. If so, should the conference be a full day? Yes = 36 No = 26 NA = 2

7. Should the conference continue to have breakout sessions? Yes = 62 No = 0 NA = 2

If Yes, what other break out topics would you like addressed?

- Resources/grants.
- More on sustainable development/local food system – impacts on reduced transportation emissions.
- Creative ideas for industry to reduce pollution (including direct emissions and reducing energy use) without incurring prohibitively high costs and costing jobs – possibly saving money and increasing competitiveness.
- Air and water interconnection.
- Public education of air quality concerns.
- Technical sessions – science of air.
- Citizen actions to improve air quality.
- Community design.
- Social marketing primer.
- Land Use Planning.
- Public awareness/ education of Air Quality Issues (Marketing of message).
- More detail on each breakout session.
- Legislative incentives.
- More representation.
- How local industries are successfully contributing to local air quality.
- Funding sources.
- Political "will" to address environmental problems.
- Available resources for industry – air permitting resources, etc.
- Fuel source alternatives, industrial perspective.
- More general public awareness.
- Diesel engines and PM2.5 pollution. What can government do?
- Solar energy, alternative fuels – electric.
- Specific controls – such as a woodstove changeout session or a diesel retrofit session.
- Status report – where we are, where we are going. New ideas and technology.

8. Should the conference focus on one topic? Yes = 6 No = 42 NA = 16

If Yes, what other topics would you like addressed?
- PM and ozone, air quality overall.
- One broad topic, with breakouts of subtopics of main topic.
- How does poor air quality impact the quality of water?
- Everything is connected.
- Statutes/laws/rules.
- Should vary from year to year.
- How to make it profitable and reduce costs for business to help control air quality.
- Trains, and what can be done to lessen their emissions.
- Climate change/renewable contribution
- Session on NC legislative initiatives that relate to air quality and associated topics.
- Electric/Battery vehicles. Why did General Motors do away with electric car in 1990?

Appendix D

Statewide Interagency Consultation Meeting

Statewide Interagency Consultation Meeting

Meeting Minutes
August 16, 2007

Meeting Attendees:

- Terry Arellano (NCDOT), Eddie Dancausse (FHWA), Laura Boothe (NCDAQ), Heather Hildebrandt (NCDAQ), Pat Bello (NCDAQ), Melanie Taylor (NCDAQ), Bob League (Rocky Mount MPO), George Bridgers (NCDAQ), Bob League (Rocky Mount MPO)

- **By phone:** Lynorae Benjamin (EPA), Lydia McIntyre (Gboro MPO), Rebecca Yarbrough (Lake Norman RPO), David Ross (MCAQ), Dana Etherton (MCAQ), Loretta Barren (FHWA), Dana Stoogenke (Rocky River RPO), Eldewins Haynes (CDOT)

NCDOT Update:

- Terry Arellano will be the NCDOT CMAQ program manager until NCDOT hires someone to fill that position. There will not be a CMAQ call for projects held anytime in the foreseeable future. Working on getting the administrative work completed (contracts, etc.) for the FY 08/09 CMAQ projects. If there is any transportation partner that has out year CMAQ funds and would like to get the projects funded sooner, contact Terry.

NCDAQ Update:

- DAQ staff changes:
  - DAQ is doing some staff rotations. Sheila Holman will be rotating to a regional office, Laura Boothe will rotate to the Planning Section Chief position and George Bridgers will rotate into Laura's position as Attainment Planning Branch Chief. These rotations will be effective Sept. 1 through Feb. 29.

    Mike Abraczinskas has been promoted to the Rules Development Branch Chief. He will no longer be the mobile source team lead. Until someone is hired Phyllis will continue to be the mobile source team lead and we will make a decision after bringing on a new person if there will be a switch.

- SIP related:
  - The Triangle redesignation demonstration is close to being proposed by EPA to approve the plan. It should be in the Federal Register within the next couple of weeks.

  - A consultation meeting is scheduled for September 7th with the Metrolina transportation partners to discuss the possibility of using new data in the 8-hour ozone SIP.

- DAQ is planning to have a stakeholder meeting in late September to discuss the model performance and results that will be used in the PM2.5 attainment demonstrations. This meeting will most likely be held in Winston-Salem and there will be one meeting for both nonattainment areas. Details will be sent out once dates and places have been determined.

- DAQ has received some of the VMT and speeds for the PM2.5 attainment demonstration MVEB process. Once all the data is received a consultation plan document will be developed to outline what data will be used and how the emissions will be calculated. This will be sent to the applicable transportation partners for their review and then will be followed up with a conference call to discuss any concerns and to try to come to an agreement on any issues that may arise. This call will most likely be held in late September.

- EPA is discussing primary PM2.5 insignificance for mobile sources and will get back with DAQ in the near future. DAQ has not decided how they will respond if EPA determines that MVEBs must be set for primary PM2.5 for the two nonattainment areas.

- Current Ozone levels:
  - DAQ shared the number of exceedances at various monitors around the region during the 2007 season. A copy of this data is attached (data is through 8/15/07). To summarize:
    - Triangle area looks good and all monitors are still attaining the standard.
    - Triad area is still attaining the standard, however one of the monitors has had 3 exceedances as of 8/15. The 3 year design value is still below the standard and DAQ believes that the region will still maintain the standard through the summer.
    - Cumberland County is still attaining the standard and although one monitor has had 2 exceedances the 3-year design value is well below the standard.
    - Hickory area has had no exceedances of the standard this year, and the 3-year design values are well below the standard.
    - Rocky Mount has had no exceedances of the standard this year, and the 3-year design value is well below the standard.
    - Metrolina area now has 4 monitors with design values above the standards. All 7 monitors in the area have had exceedances with County Line having 10 exceedances this summer and the highest being a code purple. If the summer was to end 8/15, the region's 3-year design value is 0.091 ppm, well above the standard.
    - DAQ to set up meetings to discuss transportation control measures

- Because of the potential lowering of the ozone standard and what has occurred in the Metrolina region this summer, DAQ will have meetings across the State to discuss potential transportation control measures to help reduce the on-road and off-road mobile source emissions. These meetings will occur in the late fall and will have at

least 3 regional meetings (Triangle, Triad and Metrolina areas) and potentially 2 additional meetings for the coastal and mountain areas. As the details develop they will be shared.

Rebecca Yarbrough mentioned that they would like to host the Metrolina area meeting and suggested that more than just transportation partners should be involved (i.e., local managers and county stakeholders).

- Legislation update
  - Legislation passed that allocated $500K of appropriations to be used as CMAQ matching funds for retrofitting school buses with emission control devices. DAQ will manage the program and will work with DOT and DPI on identifying school buses to be retrofitted. This program is not envisioned to be like the mobile source grants programs where DAQ will solicit for applications, but rather DOT, DPI and DAQ will work together to identify the buses and arrange to have the buses retrofitted.

    PM2.5 nonattainment areas would be able to use reductions from retrofitted buses in their area as off model credits.

<u>FHWA Update:</u>

- All of the final hardcopy conformity determination reports (CDR) have been sent to EPA and FTA except for the Triangle area CDRs. The Triangle area CDRs will be sent to EPA and FTA during the week of 8/20.
- Several weeks ago a document "SIP Implications on Transportation Conformity" was sent to all the transportation partners in preparation for upcoming conformity processes. These implications will be further discussed during the kickoff conformity interagency consultation meetings.

<u>EPA Update:</u>

- Metrolina Area SIP: Adequacy comment period closed on 8/2. Adequacy determination by EPA is still pending. It is expected that the MVEBs will be approved sometime before 10/1/08.

<u>Rocky Mount MPO:</u>

- No comments

<u>MCAQ:</u>

- No comments

<u>Rocky River RPO:</u>

- No comments

<u>Lake Norman RPO:</u>

- Rebecca Yarbrough would like to host a regional discussion dealing with TCMs. Rebecca will discuss this further with NCDAQ.

CDOT:

- No comments

GDOT:

- No comments

Next SICM call is scheduled for 9/20 at 1:00pm. NCDAQ will send out a meeting reminder.

Appendix E

Wood Stove Study Overview

In the autumn of 2006 the Reese Institute developed a survey to measure the incidence of burning in wood stoves, fireplaces and grills by local residents within a ¼ mile radius of the air quality monitoring site in Hickory, NC (Appendix 1). A pilot sample was collected by knocking on doors and administering surveys face-to-face with residents. It was important that subjects did not know that our main interest was in wood stoves, so the survey was presented as an energy use survey. Since we have few opportunities to speak to local residents, numerous questions were included which could act as a baseline for additional studies on other topics.

Dependent variables included heating/cooling and cooking fuels, yard maintenance practices, transportation methods/distances/frequency, neighborhood impressions, health, and areas of concern. While collecting this information we also recorded the age, gender, and race of the subject. Characteristics of the property/dwelling included the number of chimneys, driveways and automobiles. The survey was administered to 18 residents and is thus considered very preliminary. Fifty-six percent of respondents heated their homes with particulate-generating sources including oil, wood or kerosene (Figure 1).

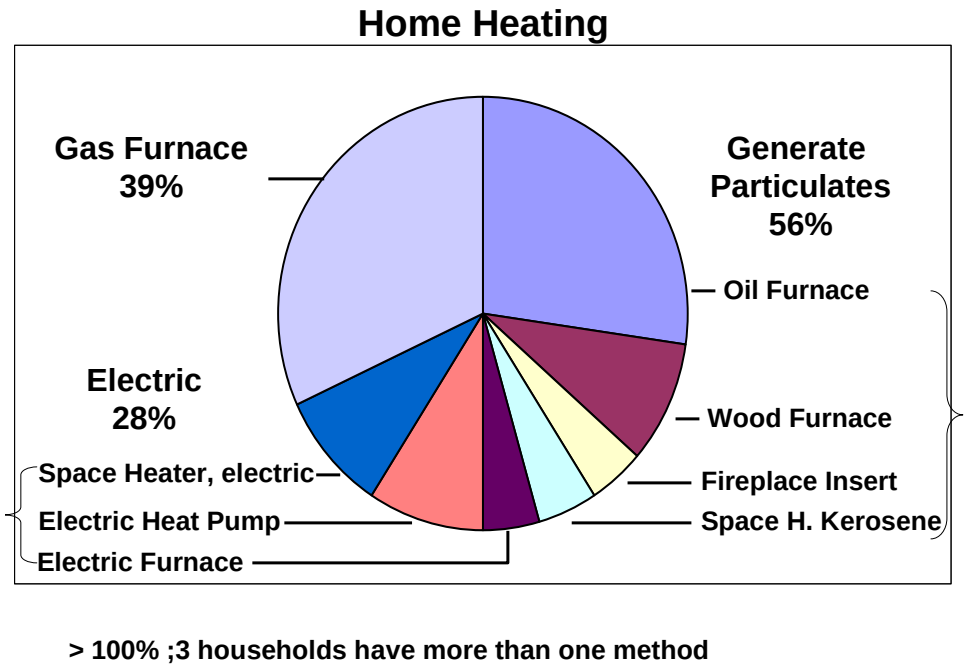


Figure 1. Home heating methods used by residents near the air quality monitoring site in Hickory, NC. N=18. Some residences used more than one source.

Only 28% used heating sources that did not locally generate particulate pollution. The majority of residents (83.3%) did not use wood stoves. Of the three residents that did heat with wood stoves, one was interested in changing theirs out for a cleaner-burning stove (assuming some assistance from the EPA), one was a renter and could not change out and one used an antique, hand-me-down stove, and did not want to change. Residents also, at

times, burned wood in their fireplaces. Forty-five percent of residences had fireplaces but half of these (22.25% of the total) did not use them. Just over 11% of residents burned wood in their fireplaces and over 11% used natural gas fireplaces. Finally, 61.1% of subjects used outdoor grills for cooking during the warmer months and of those 36.4 % (22.25% of total) used charcoal. The remaining 63.6% (38.9% of the total) cooked outside with gas grills.

Combining the household sources of particulate-generating emissions (wood stoves, fire-burning fireplaces, and outdoor grills), 50% of dwellings had no source of emissions (excluding oil-burning furnaces). Thirty-three and one third percent of homes had one source of emissions and 16.7% had two sources.

We also asked residence about their health and the health of their families. In particular, we were interested in illness that may be related to air pollution, namely, asthma, allergies, and lung problems. Only 22% of households had no complaints. Thirty-nine percent of households complained of one problem, 22% complained of 2 problems and 17% complained of all 3 problems.

Currently, we are planning on expanding the geographical scope of the study to include homes within a ½ mile radius of the air quality monitoring site and to include a reference neighborhood that is upwind of the monitoring site and is of a more affluent nature. A small grant has been submitted to NCDENR (Air Quality) to hire student surveyors and we are currently waiting to hear from that agency regarding their decision.

(Final Report expected late December 2007)

Appendix F

Miscellaneous Articles

THE NEWS HERALD

while you expand your savings. at&t

Kudzu: Could the crawler be an ozone killer? One scientist believes so

By Brian McNeill
media general
Tuesday, December 11, 2007

The vine that ate the South has a nasty case of gas.

Kudzu - the ubiquitous vine that covers shrubbery, trees, telephone poles and anything else in its path - may be responsible for sizable amounts of ground-level ozone, potentially increasing smog, aggravating respiratory ailments and quickening the pace of global climate change, say University of Virginia researcher Manuel Lerdau and State University of New York scientist Jonathan Hickman.

"No one likes kudzu," said Lerdau, director of UVa's Blandy Experimental Farm in Clarke County. "If we're right, then it'll be one more big reason to dislike kudzu."

Kudzu leaves emit a volatile organic compound called isoprene into the air. And its roots convert atmospheric nitrogen into ammonium, some of which can leach into the soil, where it is converted by bacteria into nitric oxide.

In the presence of sunlight, isoprene and nitric oxide mix together to make ozone.

Many plants form the precursors of ozone. Yet according to the researchers' initial results, it appears that kudzu produces ozone's ingredients faster and in larger quantities. Kudzu emits isoprene five to 10 times quicker than similar plants, and it produces nitric oxide at a rate of up to three times faster than its peers.

The fast-growing plant covers an estimated 3 million hectares, or 11,580 square miles, in the United States, primarily in the Southeast. With each passing year, kudzu spreads across another 50,000 hectares, or 200 square miles.

"There's enough kudzu already to be affecting ozone levels in the U.S.," Lerdau said. "With 3 million hectares, you can imagine that's quite a bit of ozone."

The best-known sources of ground-level ozone are motor vehicle exhaust and coal-fired power plants.

Breathing ozone can trigger a long list of health problems, including chest pain, congestion, coughing and throat irritation.

It can worsen the symptoms of bronchitis, emphysema and asthma. Over time, it can inflame the lining of the lung and reduce lung function. Repeated exposure can permanently scar lung tissue.

Air quality monitors in Virginia cities registered 50 instances in 2007 when ozone levels exceeded the state's air quality standard of 84 parts per billion over an eight-hour period.

Dan Salkovitz, a meteorologist with the DEQ, said Virginia's ozone levels have been steadily

Carolinas Clean Air Coalition

Weekly Air Issues Updates 8/29/07

Cleaning the Air for Kids (reprinted in Charlotte Parents)

Each day the routine act of riding a school bus exposes children to a toxic mix of airborne carcinogens and particles from diesel exhaust. Diesel engines have long been known to spew dirty exhaust from their tailpipes, but studies now reveal that levels of diesel pollutants getting inside school buses can be up to four times greater than outside levels.

Children also inhale exhaust fumes when they stand in the parking lots waiting to board idling buses. While buses are commonly regarded as a convenient and safe mode of transportation, parents need to understand the health risks and costs associated with this convenience.

Diesel exhaust, filled with tiny particles and toxic gases, impairs our children's developing lungs and aggravates asthma and allergies. Air pollution affects children in particular because, given their faster respiration rate, their lungs process up to 50 percent more air than adults. Studies have shown that children growing up in polluted air suffer, as adults, from a reduction in lung capacity by as much as 15 percent.

A 2005 Clean Air Task Force report cites diesel exhaust being responsible for some 300 deaths, 340 heart attacks and 6,500 asthma attacks each year in North Carolina.

The good news is that technology to reduce dangerous pollutants inside and outside of school buses is readily available and cost-effective. The best technology is a closed crankcase ventilation system for the engine to prevent fumes from getting inside the bus cabin, coupled with a diesel particulate filter for the tailpipe. Retrofitting a bus with a ventilation system and a tailpipe filter reduces particle pollution by an impressive 95 percent.

Charlotte-Mecklenburg Schools (CMS), with the largest bus fleet in North Carolina, has been a leader in reducing emissions. Since 1995, CMS has used a variety of strategies to retrofit their buses and reduce idling. Even with these efforts, none of their 1,300 buses uses the combined 95 percent reduction technology and just 3 percent of the fleet has diesel particulate filters.

If you are thinking of pulling your child off the bus, think again. Although no government agency monitors air quality inside school buses, parents have a critical role to play in cleaning up school buses for all children.

Clear the Air for Kids!, an initiative sponsored by the Carolinas Clean Air Coalition (CCAC), wants to solve this problem immediately and needs active participation from parents and parent groups. In May, State Representative Ruth Samuelson of Charlotte introduced the Clean School Bus Act in the state legislature. The proposal was to clean up school buses,

create a diesel reduction funding program and take advantage of federal matching dollars to support these goals. This bill is just the beginning of a long campaign to ensure our children have a healthy and safe ride to school.

Take Action Now

• Join a meeting of parents, medical professionals and others on Sept. 17 to get involved in Clear the Air for Kids!
• Visit www.cleanschoolbusaction.org for meeting details and more action ideas.
• Contact school board members and state legislators to demand funding for school bus retrofits.
• Turn off your engine when waiting in the carpool line for your children.

Small energy savings can add up

Unplugging appliances can shave watts from power bill

CHRISTOPHER D. KIRKPATRICK

ckirkpatrick@charlotteobserver.com

Home air conditioners are energy hogs, but little sources of power running quietly behind the scenes can also pile up over time, adding to costs and demand.

It's cell phone chargers left plugged in, DVD clocks running day and night. Televisions, cable boxes, digital video recorders -- any device with a computer chip that allows a display clock or remote control to work.

As Duke Energy's residential customers brace for what could be their highest monthly bills ever, conservationists and utilities say unplugging electronics that drain power even in the off position is an often overlooked way to save electricity.

The Lawrence Berkeley National Laboratory in California estimates the power wasted from a typical home's electronics equals burning a 60-watt bulb year-round. Among the worst offenders: idle cable boxes.

And there's a reason your cell phone charger feels warm when it's plugged in to a socket but not charging anything: It's using energy.

Charlotte's record heat last week spurred unprecedented power demand for Duke as consumers cranked air conditioning -- a home's biggest summer power expense. Duke cut power for short stretches to businesses in a voluntary program.

The heat wave comes as Duke seeks permission to build large-scale coal and nuclear power plants it says it needs to meet growing demand. The Charlotte-based utility says it adds tens of thousands of customers a year.

To be sure, homes are getting larger and more expensive to cool. But it's the digital age driving increased residential demand now and into the future, says the Edison Electric Institute, which represents the industry.

Even as big appliances -- washers, dryers, refrigerators -- grow more efficient, computers and plasma TVs are pumping up household power demand.

The Edison group predicts total household consumption will jump 11 percent by 2030, driven by "appliance-related consumption, reflecting the use of computers and other digital technologies," says an institute report called "Electricity 101."

The federal Energy Information Administration projects electricity consumption will grow 3.5 percent annually for TVs and computer equipment through 2025, to more than double the 2003 level.

Those internal chips that keep your microwave or DVD clock on all night are part of the power surge. Some conservationists call them energy vampires because they suck power.

Experts disagree about how much power is wasted:

• The Lawrence Berkeley National Lab estimated a range of 5 percent to 10 percent of a home's power, costing Americans more than $5 billion a year. For an average N.C. home, that's roughly $50 to $100 a year.

• The Consumer Electronics Association estimates standby power waste from home electronics is less than 3 percent of a home's energy budget, excluding microwaves and other kitchen appliances, said spokeswoman Kristina Taylor Duggan.

• The U.S. Department of Energy estimates that up to 40 percent of the electricity used for home electronics is spent while devices are turned off -- equal to the annual output of 17 midsized power plants.

The standby power issue has been studied extensively. President Bush ordered in 2001 that government-

purchased electronics be equipped to reduce standby power use.

Jeff Tiller, an Appalachian State University professor of building sciences, envisions a future when home power systems run on software packages that turn electronics on and off as consumers need them.

"You could write a little routine and have the power when you needed it," he said.

Southern Heat and Power Surge

A cooler than normal summer turned torrid when August began with 13 straight 90-plus degree days.Duke Energy broke its record for demand last Wednesday and at one point was using more than 90 percent of its total capacity. The utility plans for a maximum of 83 percent. The heat wave added to power demand that has been growing steadily in the South for three decades.

Household electrical use grew 87 percent between 1981 and 2001, faster than any other region and compared with 61 percent nationwide, the federal Energy Information Administration reports. During that period, the percentage of Carolinas homes with central air conditioners doubled and those with microwave ovens increased nearly seven-fold.

Unplugging Power Waste

• Consider investing extra in a laptop for your next computer upgrade. It could pay off. They use much less energy than desktops.

• Unplug battery chargers when the batteries are fully charged or when the chargers are not in use.

• Plug home electronics, such as TVs and DVD players, into power strips and turn the strips off when the equipment is not in use.

• Look for the EnergyStar label on home appliances, electronics and other products.

• Air dry dishes instead of using your dishwasher's drying cycle.

• When shopping for a new clothes dryer, look for one with a moisture sensor that automatically shuts off the machine when your clothes are dry.

• Shut down your personal computer when away for 20 minutes or more, and turn off both the tower and the monitor if you will be away for two hours or more.

Source: U.S. Department of Energy

Staff writer Bruce Henderson contributed

Greater Hickory Green Building and Solar Tour

2007 Tour Schedule

8:00 – 9:00	**Kickoff Event at Western Piedmont Council of Governments** Registration with coffee and donuts Alternative Fuel Vehicle Display Screening of "Kilowatt Ours"
9:00 – 12:30	**Morning Tour (leaving from WPCOG)** Thomas Residence – Passive and Active Solar Foothills Bio-Energies – Biodiesel Fueling Station Western Piedmont CC – Alternative Energy Display
12:30 – 1:00	**Picnic Lunch (please bring your own lunch)**
1:00 – 4:30	**Afternoon Tour (leaving from WPCOG)** Thompson Residence – Net Zero Energy Home Sunqest – Solar Systems Manufacturing Plant Catawba County Landfill – Co-Generation Facility

Please note: We have a van for the tour and we would prefer that everyone carpool if possible. However, you may follow along in your own vehicle if necessary. There is no charge for the tour, but donations will be accepted to cover the cost of fuel for the van.

Thank you to the following sponsors and volunteers:

American Solar Energy Society
http://www.ases.org/

Foothills Bio-Energies
http://www.foothillsbio-energies.com/

GO GREEN Hickory – Maria Goldstein (866) 637-8870

Home Energy Solutions, Inc.
http://www.homeenergysol.com/

North Carolina Sustainable Energy Association
http://energync.org/

SunQest, Inc.
http://www.sunqest.com/

Western Piedmont Council of Governments
http://www.wpcog.org/

Tony - This is on the MPO's web page
http://trans.wpcog.org/
click on "planning" then
Western Piedmont Regional Transit Authority

Western Piedmont Leads the Way

Officials in Alexander, Burke, Caldwell and Catawba counties along with the municipalities of Hickory, Newton and Conover recently passed resolutions to create a regional transit authority. Tentatively called "Western Piedmont Regional Transit Authority," the organization will become the first regional public transportation authority with consolidated urban-rural transit service in the state.

"This is a huge step forward in addressing current and future public transportation needs in our region," said John Tippett, planning director for the Western Piedmont Council of Governments, which helped to lead the effort. "We are well on our way to having the first truly consolidated urban/rural multi-county transit system in North Carolina."

The transit authority plans to assume the operations of the rural and urban transit systems in the four-county region, collectively known as the "Unifour," on July 1, 2008. The following four service providers will be consolidated:

- Alexander County – community transportation provided by Alexander County Transportation, a county-operated system
- Burke County – community transportation provided by Burke County Transit Administration Inc., a nonprofit agency
- Caldwell County - community transportation provided by Caldwell County Area Transit System Inc., a nonprofit agency
- Catawba County – Piedmont Wagon Transit System, operated by the city of Hickory, which provides community transportation to county residents and fixed-route service for the cities of Hickory, Newton and Conover

The authority's story began in 2001 when Caldwell County Area Transit System applied for a planning assistance grant on behalf of Unifour. The funding, awarded from the U.S. Department of Agriculture through the Community Transportation Association of America in 2002, made possible a feasibility study, completed by consultants RLS and Associates in 2004.

From feasibility to implementation, the project moved forward in 2005 when Hickory used federal Section 5307 planning funds, combined with state matching funds from the NCDOT Public Transportation Division, to finance the implementation study. The city contracted with the KFH Group to complete the study, and work was initiated in May 2006.

The Western Piedmont Council of Governments served as facilitator for the project. A study committee met regularly and guided the progress of the Regional Transportation Implementation Plan. Additionally, each county conducted meetings and public hearings.

"The project had support early on from the transit directors and their transportation advisory boards," said Pat Perry, transportation planner with NCDOT Public Transportation Division, whose assigned area includes Unifour. "They had the willingness to pursue the idea and explore their options with the common goal of how to provide better transportation within the region."

The Western Piedmont Regional Transit Authority is well on its way to becoming the state's next regional system, following the regionalization initiative promoted by the Public Transportation Division. An additional 29 counties and municipalities have expressed interest in exploring the concept.