Western Piedmont Council of Governments
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Over 30 Years of Regional Leadership

December 29, 2006

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 31, 2006 Progress Report for the Unifour Early Action Compact submitted on behalf of the Unifour Air Quality Committee. From July 1, 2006 until present, the UAQC and local members of the Unifour EAC have made continued progress addressing ozone pollution in the Hickory-Morganton-Lenoir metropolitan area. Please see the attached report which details 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
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
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8 Unifour Area, NC (Effective date of nonattainment designation deferred)

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's, $$)	H. Additional Information
Open burning ban-ozone action days	The NC Environmental Management Commission approved a new rule that would ban open burning during the ozone season on code orange and code red ozone action days for those counties that NCDAQ forecasts next day ozone levels, including the Unifour area.	This is a mandatory no burn rule for metropolitan areas around the state of NC including the Hickory area. The NCDAQ has formed an Open Burning Outreach Team (OBOT) responsible for helping to disseminate information to the public regarding open burning.	June 1, 2004	0.7 TPD	0.5 TPD		The emissions are calculated for open burning by multiplying the rural population by an emission factor provided by the U. S. Environmental Protection Agency. To model the open burning rule, a conservative 50% compliance/penetration/effective combined rate was assumed for those counties in our ozone forecast areas.
Local governments join NC Air Awareness Program	Local governments join and participate in the NC Air Awareness Program. This measure calls for the development, adoption, and implementation of an "Ozone Action Day Plan." These plans include provisions that help reduce ozone pollution on "alert days." The Air Awareness program also includes outreach and education programs designed to inform residents on issues relevant to air quality.	Each local member of the EAC has adopted an "Ozone Action Day Plan" with provisions that help reduce ozone pollution.	2004 and 2005				The NC Division of Air Quality issues a ground-level ozone forecast every day from May 1st through September 30th that consists of a color-coded forecast and corresponding Air Quality Index (AQI) number The AQI values predict the maximum 8 hour ozone concentration for the following day. This information is distributed to participants via email and the NC Ozone Forecast Center website. The ozone forecasts allow organizations to make preparations to take action and implement their Ozone Action Plans.
Enhanced awareness; outreach;educate	This activity has been combined with the measures related to the NC Air Awareness Program and local clean air policies.						
Energy conservation plan	An energy conservation plan will be developed that directs local EAC members to reduce the consumption of electricity in public facilities through practical measures related to: lighting systems, HVAC, weatherproofing, insulation, electrical equipment, etc.	Each local member of the EAC has adopted an "Energy Conservation Plan," or policy with provisions that help conserve natural resources and reduce emissions from EGUs.	2005	0.5 TPY	0.4 TPY		
Staff person-air quality contact	Designation of air quality contacts for each EAC local member will help guarantee each organization's adherence to all other local control measures. These contacts will be responsible for the dissemination of air quality information throughout their respective organizations and for the oversight of air quality programs and EAC reporting requirements as well as local outreach and education programs.	Each local EAC government have appointed staff members as their air quality contact.	2004				
Adopt local clean air policy	Adopt a local clean air policy and appoint stakeholder group to identify and recommend locally feasible air quality improvement strategies.	Each local member of the EAC has adopted clean air policies.	2005				
Landscape/tree ordinances	Planted trees and vegetative landscaping reduce the need for air conditioning, reduce the heat island effect in urban areas, and help reduce consumption of electricity. Landscaping ordinances establish minimum standards for new developments and promote the concepts of "Urban Forestry" in an effort to reduce emissions from EGUs.	Each local member of the EAC has adopted landscaping standards for new developments in their jurisdictions. The City of Hickory has been designated as a Tree City USA. Criteria for this designation include: establishment of a Tree Board, adoption of a Tree Ordinance, and spending at least two dollars per capita on the urban forestry program. Hickory fulfills all these requirements. See Appendix A.	2003 / 2005				

8 Unifour Area, NC (Effective date of nonattainment designation deferred)

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's, $$)	H. Additional Information
Implement Smart Growth	Each local EAC member will actively encourage compact development that provides air quality benefits by promoting land use activities and associated travel behavior which minimizes vehicle miles traveled.	Catawba County has completed several Small Area Plans and is implementing a new Unified Development Ordinance that are based largely on Smart Growth principles. Lenoir is in the midst of developing a comprehensive plan with many provisions preventing sprawl and requiring more dense developments. Morganton has initiated a public/private redevelopment plan for much of its downtown area. Hickory continues to implement its Hickory by Choice growth management plan which incorporates Smart Growth techniques and regulations. See Appendix B.	2003 / 2005				
Encourage bicycle and pedestrian usage	Each member will contribute to a regional bicycle and pedestrian plan that includes provisions for the establishment of a network of greenways paths, trails, and bicycle facilities for the continued pursuit of additional non-motorized travel opportunities throughout the Unifour.	The WPCOG has documented such ongoing efforts throughout the Unifour in the Greater Hickory Urban Area Transportation Plan. (http://trans.wpcog.org/planning.asp)	2003 / 2005	2.0 TPY	1.6 TPY		
Support coordination of transportation planning organizations	The Greater Hickory MPO, and the Unifour RPO, do long range transportation planning on a five year cycle to ensure that highway and transit projects conform to the air quality goals established by the EAC's air quality SIP.	All ten members of the EAC participate and make significant contributions to the MPO planning process and all four counties in the region participate and contribute to the RPO.	2003				The Greater Hickory MPO and RPO will coordinate transportation activities in the Unifour Area in such a way that does not cause new air quality violations, worsen existing violations, or delay attainment of the national ambient air quality standards for ozone. The MPO and RPO will use the directionally appropriate concepts of Transportation Conformity as a foundation for transportation planning activities. The WPCOG conducts these activities based largely on results from the modeling of mobile source emission budgets supplied by the NCDAQ.
Encourage compressed/flexible work schedules	In an effort to reduce emissions from mobile sources, members encourage the use of compressed work weeks and flexible hours for government employees wherever appropriate.	Currently, several of the stakeholders, including Caldwell County, Catawba County, and the City of Hickory actively use this technique to help reduce traffic congestion and related air quality problems. All members have adopted resolutions supporting this measure.	2004	1.5 TPY	1.3 TPY		
Expand transit and ridesharing	The Piedmont Wagon Transit System (PWTS) and the Piedmont Wagon Manager's Consortium is committed to air quality improvements by continually evaluating expanding transit service and the number of system users. The system has adopted policies that limit bus idling and incorporate the latest transit technology into the system. The Piedmont Wagon Transit System will seek to play a useful role in not only providing an efficient public transit service but also in fostering the implementation of ridesharing programs by area businesses.	The Piedmont Wagon Transit System has increased its service area and is taking delivery of new equipment to replace older less efficient buses. The WPCOG has initiated a feasibility study for the development of a regional transit authority to serve the greater metro area.	2005	0.5 TPY	0.4 TPY		In an effort to protect health and improve air quality, all of the school districts in the Unifour have adopted idle reduction policies for the operation of all school buses.
More efficient trafficking systems	A Transportation Demand Management (TDM) plan will complement the ongoing transportation planning activities in the region and help alleviate air quality problems through efficient traffic management, engineering, and maintenance.	The City of Hickory currently uses coordinated signalization and traffic management in efforts to avoid idling problems and to help decrease traffic congestion. The City of Lenoir has performed major route configurations to several thoroughfares, effectively reducing congestion in the City's CBD.	2005				

8 Unifour Area, NC (Effective date of nonattainment designation deferred)

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's, $$)	H. Additional Information
Expand vehicle I&M	The vehicle emissions inspection and maintenance program has been expanded in the Unifour to include Caldwell, Burke, and Catawba Counties. Vehicles are tested using the onboard diagnostic system (OBDII), an improved method of testing, which indicates NOx emissions, among other pollutants. The previously used tailpipe test (i.e., idle test) did not measure NOx. The inspection and maintenance program is above and beyond what is federally required for these areas.	The Inspection and Maintenance program has been implemented in three Unifour counties, Caldwell, Catawba, and Burke.	July 2003 - July 2005	0.8 TPD	0.8 TPD		
Clean Smokestacks Act	In June 2002, the N.C. General Assembly enacted the Clean Smokestacks Act, requiring coal fired power plants to reduce annual NOx emissions by 78% by 2009. These power plants must also reduce annual sulfur dioxide emissions by 49% by 2009 and by 74% in 2013.	This measure was modeled in the attainment demonstration and included in the SIP as a state measure. See Appendix C.	June 2005		4.95 TPD		One of the first state laws of its kind in the nation, this legislation provides a model for other states in controlling multiple air pollutants from old coal-fired power plants.
Comments:							
Clean Cities and AFVs	The UAQC will continue its participation as a stakeholder in the Carolina Clean Fuels Coalition and utilize the concepts and methods of the Department of Energy Clean Cities program in order to bring more alternative fuels and alternative fuel vehicles (AFVs) to the Unifour. Members of the EAC will commit to replacing conventional vehicles with AFVs and towards the creation or expansion of alternative fuel delivery systems within the region.	Each local member of the EAC has committed to the research and pursuit of additional Alternative Fuel Vehicles and alternative fuel delivery systems wherever feasible. The UAQC is a participant in the Southeast Diesel Colaborative, an initiative that is working to reduce emissions from diesel engines. Caldwell County has committed significant staff and resources to the Alternative Energy Task Force. This committee is developing a landfill gas recovery system and a 5,000,000 gallon per year biodiesel production facility. The City of Conover has converted its entire fleet of diesel vehicles, both on and off-road, to biodiesel. See Appendix D & E.	2005			UAQC stakeholder, the Catawba Valley Heritage alliance has received funding from the NCDAQ in the amount of $25,000 to place a commercial biodiesel station in Catawba County.	This measure was not included in the summary table provided by EPA. It is one of the original local control measures and the WPCOG and UAQC have been actively pursuing funding to help increase AFVs and the AFV infrastructure in the region.

Unifour Early Action Compact

Biannual Progress Report

December 29, 2006

Compiled by:

Tony R. Gallegos
Western Piedmont Council of Governments

Contents

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 2006, 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, 2006.

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, 2006 through December 31, 2006 meetings were held on the following dates: July 25, August 22, September 26, October 24 and November 28th.

- 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. WPCOG Planner Ron Hancock: interviewed with Debi Nelson on Caldwell County cable TV channel, Presentation to Claremont Planning Board, Presentation to Caldwell County Managers, Volunteer at Bele Chere festival with Department of Air Quality; WPCOG Planning Director, John Tippett was a presenter at the Air Pollution conference in Denver, and at the North Carolina Air Pollution Association; Multiple WPCOG staff all assisted with a Solar Home Tour, Early Action Summit in Columbia, South Carolina, 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 a vigorous education/outreach program, and sustaining a dynamic 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 2006 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 Taylorsville reduced its energy costs approx 18% from Sept 2005 to Sept 2006……the reduction in savings coming mostly during the summer months. Taylorsville saved/cut approximately $10,000 in fuel costs in that same period of time.

- 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.

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

- Taught four 5th grade classes on “what is ozone” and distributed materials to them.

- 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 until this year. 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.

- See attached news article: "Condos Offer Unique Living Experience" Morganton News Herald , November 30, 2006

- The City instituted a new policy in 2006 by 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.
- Completed a signal optimization project on US 321 to reduce automotive and truck emissions related to idling at signalized intersections.
- Implemented an 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 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 10^{th} 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:

- 2nd grade tours – ozone education and prevention information was provided to approximately 2000 students from all public and private area schools
- Catawba County Ozone Intranet Contest is up and running again this ozone season where county employees get points and awards for the individual earning the most points for participation in ozone prevention activities on a monthly basis as well as for the ozone season.
- A friendly competition with City of Hickory employees is up and running again for this ozone season to determine whether county or city employees are the most ozone friendly.
- Air quality information is again featured on the county web site.
- Linked county website with Dept of Air Quality ozone and PM 2.5 daily forecasts.
- Provided air quality presentations and information upon request to various county agencies, schools, churches and community organizations.
- All new county employees are provided a brief air quality presentation via county orientation on a bi-monthly basis throughout ozone season, which includes distribution of orange and red ozone alert buttons to be worn by county employees on ozone alert days.
- The county has completed the "draft" of the Unified Development Ordinance (UDO), which calls for reducing the amount of asphalt in parking lots, thereby reducing the temperatures in urbanized areas. Internal landscape islands disbursed throughout the parking lots along with additional landscaping around parking lots will help do a better job of filtering the air close to land surfaces. The county anticipates that the UDO will be considered for adoption in the fall of 2006.

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 2006-07 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.

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 their 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 NOx emissions for the period evaluated. The Cumberland County EAC area did experience an increase of emissions, however it was below the ten percent action trigger discussed in the EAC State Implementation Plan. 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. Since the overall NOx emissions in these EAC areas had a significant decrease and the 8-hour ozone design values did not increase, the North Carolina Division of Air Quality (NCDAQ) does not believe further action is needed at this time.

The annual review of the average annual vehicle miles traveled (VMT) growth rate comparison between the VMT used in the EAC 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. Although a few individual counties had an increase, all counties were below the ten percent action trigger threshold.

Impact on Ozone Formation

For the period evaluated, all of the EAC areas experienced decreases in ozone concentrations on average. Although one monitor in the Mountain EAC area and one monitor in the Triad EAC area showed slight increase in the 8-hour design values from 2003-2005 to 2004-2006 design value periods, the regional design value for each EAC area either remained steady or decreased. The EAC areas observed few exceedances of the 8-hour ozone standard during 2006, despite weather conditions that were historically conducive to ozone production. Most areas observed far fewer exceedances than in 2002 (which had a warm and dry ozone season) and were generally below the average number of exceedance days for 1994-2005.

Conclusion

Neither the stationary point source nor mobile source action triggers detailed in the maintenance plan section of the EAC State Implementation Plan (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 at this time.

Table of Contents

NOTE: (Due to incorporation in UnifourBi-Annual Report original page numbering is not valid, also Appendix A and B have not been 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 Hickory 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 second 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, NCDAQ committed to conduct an annual review of growth of stationary point sources by comparing the latest available annual stationary point source nitrogen oxides (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 2004. 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 2004. 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 2004. 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 2004) of this report.

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

	2000	*2004*	*Percent Change*
Cumberland County	*831.7*	*895.6*	*7.7%*

Table 2: NOx Emissions from Permitted Stationary Sources

Mountain Area EAC Area (tons/year)

	2000	**2004**	**Percent Change**
Buncombe County	**6,931.4**	**4,744.4**	**(-) 31.6%**
Haywood County	**4,742.1**	**4,224.2**	**(-) 10.9%**
Madison County	**0**	**9.1**	**Greater than 100%**
Total for Area	**11,673.5**	**8,977.7**	**(-) 23.1%**

Table 3: NOx Emissions from Permitted Stationary Sources

Triad EAC Area (tons/year)

	2000	**2004**	**Percent Change**
Alamance County	**418.3**	**348.6**	**(-) 16.7%**

Caswell County	**8.3**	**0**	**(-) 100.0%**
Davidson County	**4,454.4**	**1,375.8**	**(-) 69.1%**
Davie County	**68.9**	**36.2**	**(-) 47.5%**
Forsyth County	**2,493.7**	**1,202.9**	**(-) 51.8%**
Guilford County	**657.5**	**631.4**	**(-) 4.0%**
Randolph County	**362**	**367.1**	**1.4%**
Rockingham County	**9,214.5**	**5,197.5**	**(-) 43.6%**
Stokes County	**32,513.1**	**26,723.0**	**(-) 17.8%**
Surry County	**475.5**	**445.9**	**(-) 6.2%**
Yadkin County	**0**	**2.5**	**Greater than 100%**
Total for Area	**50,666.2**	**36,330.9**	**(-) 28.3%**

Table 4: NOx Emissions from Permitted Stationary Sources

Unifour EAC Area (tons/year)

	2000	**2004**	*Percent Change*
Alexander County	*19*	*16.6*	*(-)12.6%*
Burke County	*344.5*	*254.3*	*(-)26.2%*
Caldwell County	*473.3*	*466.1*	*(-)1.5%*
Catawba County	*27,075*	*18,612.9*	*(-)31.3%*
Total for Area	**27,911.8**	**19,349.9**	**(-) 30.7%**

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, the Cumberland County EAC area was the only EAC area showing an increase in NOx emissions (7.7 %) for the time period evaluated. Based on the criteria above, the NCDAQ does not believe further action is warranted since the increase in emissions is less than 10%.

Madison County reported NOx emissions in 2004 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 represent only a very small portion of the total point source NOx emissions reported in the Mountain EAC area, less than 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.

Randolph County, in the Triad EAC area, reported NOx emissions in 2004 that were up 1.4% over those emissions used in the 2000 EAC SIP modeling analysis. Based on the criteria above, the NCDAQ does not believe further action is warranted since the increase in emissions is less than 10% and the entire Triad EAC area as a whole saw a significant decrease (~28%) in point source NOx emissions.

Yadkin County reported NOx emissions in 2004 that were greater than 10 percent higher than those emissions used in the 2000 EAC SIP modeling analysis. Yadkin County is also 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 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 28% decrease in NOx emissions. Therefore, 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 none of the latest 3-year, 8-hour

design values are greater than 0.080 ppm in Cumberland, Madison, Randolph, or Yadkin

Counties or in their corresponding EAC areas. Therefore, based on the criteria above,

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:

- 2000-2005 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	1.07	-35.91
Unifour EAC Area			
Alexander	3.88	3.17	-18.17
Burke	2.01	0.89	-55.63
Caldwell	3.10	2.71	-12.88
Catawba	2.73	1.86	-31.68
Total Area	**2.67**	**1.83**	**-31.43**
Mountain EAC Area			
Buncombe	2.16	1.89	-12.39
Haywood	2.42	1.27	-47.51
Madison	2.29	2.34	2.09
Total Area	**2.24**	**1.75**	**-21.61**

Table 5 (continued): 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
Triad EAC Area			
Alamance	2.29	0.38	-83.37
Caswell	2.40	-0.07	-102.95
Davidson	2.82	1.08	-61.78
Davie	2.51	2.00	-20.52
Forsyth	2.32	1.68	-27.46
Guilford	2.17	0.97	-55.30
Randolph	2.87	0.76	-73.54
Rockingham	2.34	0.10	-95.52
Stokes	2.20	1.57	-28.78
Surry	2.60	-0.39	-114.92
Yadkin	2.29	0.82	-64.23
Total Area	**2.38**	**0.94**	**-60.72**

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. When looking at the counties individually, only one county, Madison County in the Mountain EAC area, showed a slight increase in average annual VMT growth rate compared to what was used in the EAC SIP. This was a 2.09% increase, which is well below the 10% action trigger.

Since the average annual VMT growth rates were all well below the 10% action trigger, no further action is required by the NCDAQ.

III. Air Quality Analysis

The NCDAQ is required to evaluate design value (DV) trends and ozone exceedance trends from 1994 to 2006 to determine if any of the EAC areas show increases in ozone formation. It should be noted, the 2006 ambient ozone data is currently being quality assured by NCDAQ staff and has not been officially submitted to the USEPA. Therefore, the 2006 values in the tables below may change.

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 2006 ozone season is also included.

1-hour 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 0.124 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 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
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
	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
	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
	Waynesville	37-087-0004				0.090	0.094	0.094	0.095	0.091	0.091	0.084	0.082
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
	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
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
	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
	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
	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
	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
	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
	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
	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
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
	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

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 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. The Triad area is the exception in the 1-hour values and follows a different trend. After the 1996-1998 DV period, values 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 showing a leveling off.

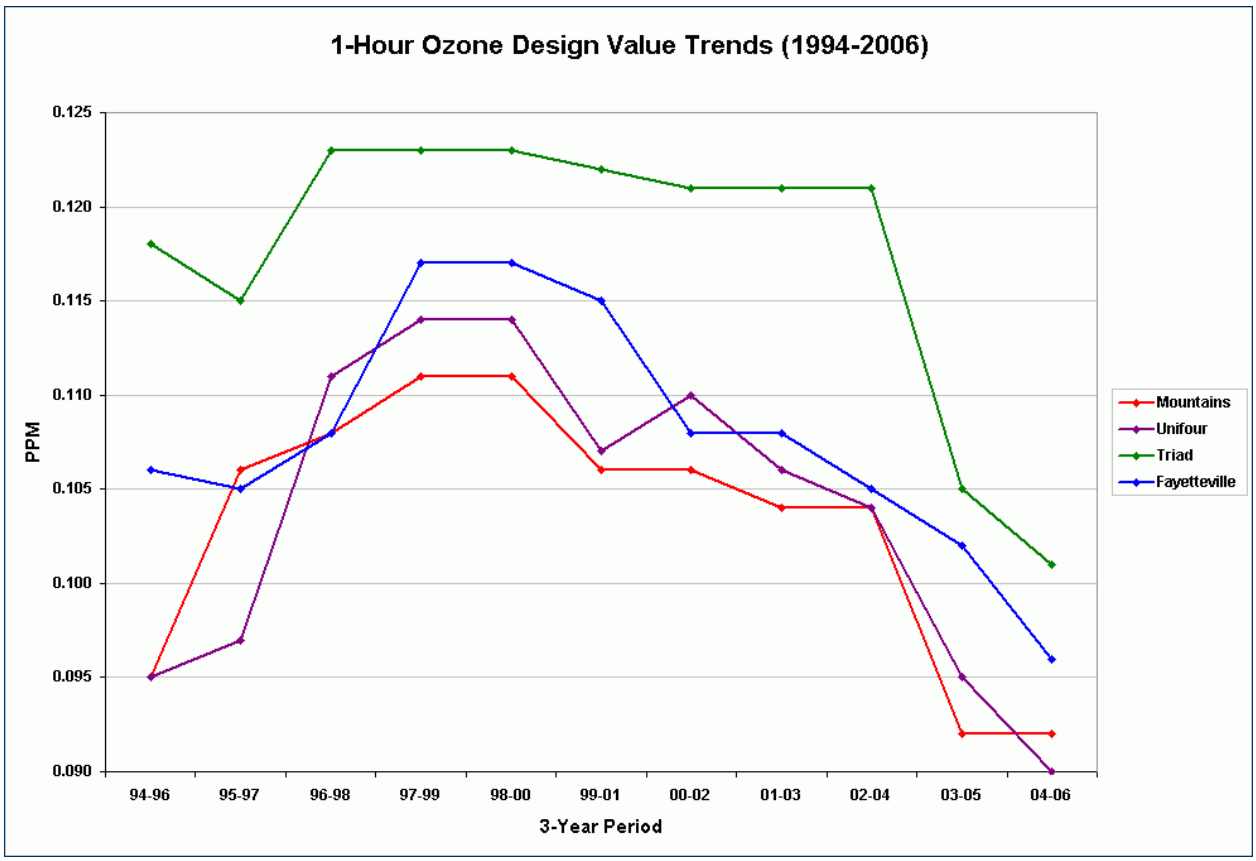

Figure 1: The graph displays the trend in the area-wide 1-hour design values (in parts per million) for each EAC area from 1994-2006.

8-hour Design Value Trends

Much like the 1-hour values, 8-hour 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.

Figure 2 below shows the trend in 8-hour 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.

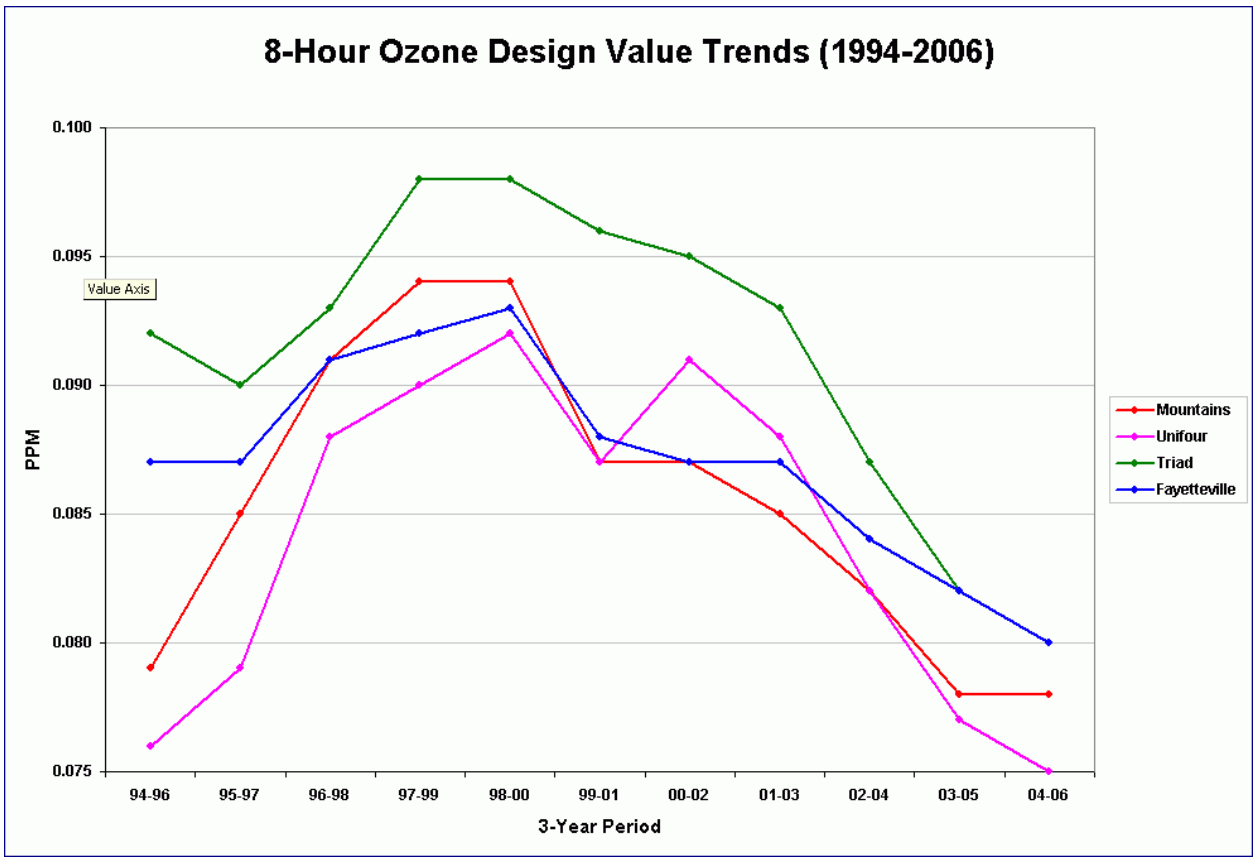

Figure 2: The graph displays the trend in the area-wide 8-hour design values (in parts per million) for each EAC area from 1994 to 2006.

The 8-hour design values for the monitors in the EAC areas are listed in Table 7. 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 7: 8-hour 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
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
	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
	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
	Waynesville	37-087-0004						0.080	0.080	0.079	0.076	0.073	0.069
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
	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
Triad	Cooleemee	37-059-0002			**0.092**	**0.098**	**0.098**	**0.096**	**0.095**	**0.093**	**0.086**	0.082	0.079
	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
	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
	Shiloh Church	37-067-0028			**0.087**	**0.086**	**0.088**	**0.089**	**0.092**	**0.088**	0.079	0.074	0.072
	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
	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
	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
	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
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
	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

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 in the last 4 years (2003-2006) in any EAC area of the 1-hour ozone NAAQS (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
Mountains	Bent Creek	37-021-0030	0	0	0	0	**1**	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
	Purchase Knob	37-087-0036		0	0	0	0	0	0	0	0	0	0	0	0
	Waynesville	37-087-0004						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
	Lenoir / Caldwell Co.	37-027-0003		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
	Hattie Ave.	37-067-0022	0	**1**	0	0	**1**	**1**	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
	Shiloh Church	37-067-0028			**1**	0	**1**	**1**	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
	Mendenhall (McLeansville)	37-081-0013	0	0	**1**	0	0	0	0	0	**2**	0	0	0	0
	Bethany	37-157-0099	0	0	0	0	**1**	0	0	0	**2**	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
Fayetteville	Wade	37-051-0008	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

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 two exceedances since 2003, one in 2005 and one in 2006. In the Unifour region, there have been no exceedances in the past 3 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 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.

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
Mountains	Bent Creek	37-021-0030	0	0	0	0	5	2	7	1	7	0	0	1	0
	Frying Pan	37-087-0035	0	5	5	4	23	24	4	1	13	0	0	0	1
	Purchase Knob	37-087-0036		4	1	7	12	19	5	0	18	0	0	0	0
	Waynesville	37-087-0004						1	3	0	2	0	0	0	0
Unifour (Hickory)	Waggin Trail (Taylorsville)	37-003-0004	1		0	3	15	2	7	5	17	1	0	0	0
	Lenoir / Caldwell Co.	37-027-0003		1		1	10	18	4	2	10	3	0	0	0
Triad	Cooleemee	37-059-0002			3	11	18	24	17	11	22	4	0	3	1
	Hattie Ave.	37-067-0022	2	8	3	9	15	16	6	10	15	5	0	0	2
	Union Cross	37-067-1008	4	4	5	12	18	11	9	8	15	3	0	0	3
	Shiloh Church	37-067-0028			4	1	9	6	5	10	8	0	0	0	0
	Cherry Grove	37-033-0001	3	4	7	17	19	7	9	6	15	3	0	0	0
	Mendenhall (McLeansville)	37-081-0013	5	5	3	3	18	18	8	4	20	2	0	3	2
	Bethany	37-157-0099	8	0	6	11	5	2	3	9	15	3	0	0	0
	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
Fayetteville	Wade	37-051-0008	3	3	4	5	13	17	4	2	17	4	0	3	0
	Golfview (Hope Mills)	37-051-1003	4	4	9	4	24	14	3	3	14	3	0	8	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. 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.

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
Triad	Cooleemee			0.084	0.092	0.102	0.100	0.094	0.094	0.098	0.089	0.073	0.084	0.080
	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
	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
	Shiloh Church			0.088	0.079	0.094	0.086	0.086	0.096	0.094	0.074	0.071	0.078	0.067
	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
	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
	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
	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
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
	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
	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
	Waynesville						0.082	0.083	0.075	0.084	0.079	0.066	0.074	0.069
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
	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
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
	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

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

Figure 3 displays the maximum 4th highest ozone value for each area. Although there can be a great deal of fluctuation in the 4th highest ozone 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. With the 2006 data this downward trend continued.

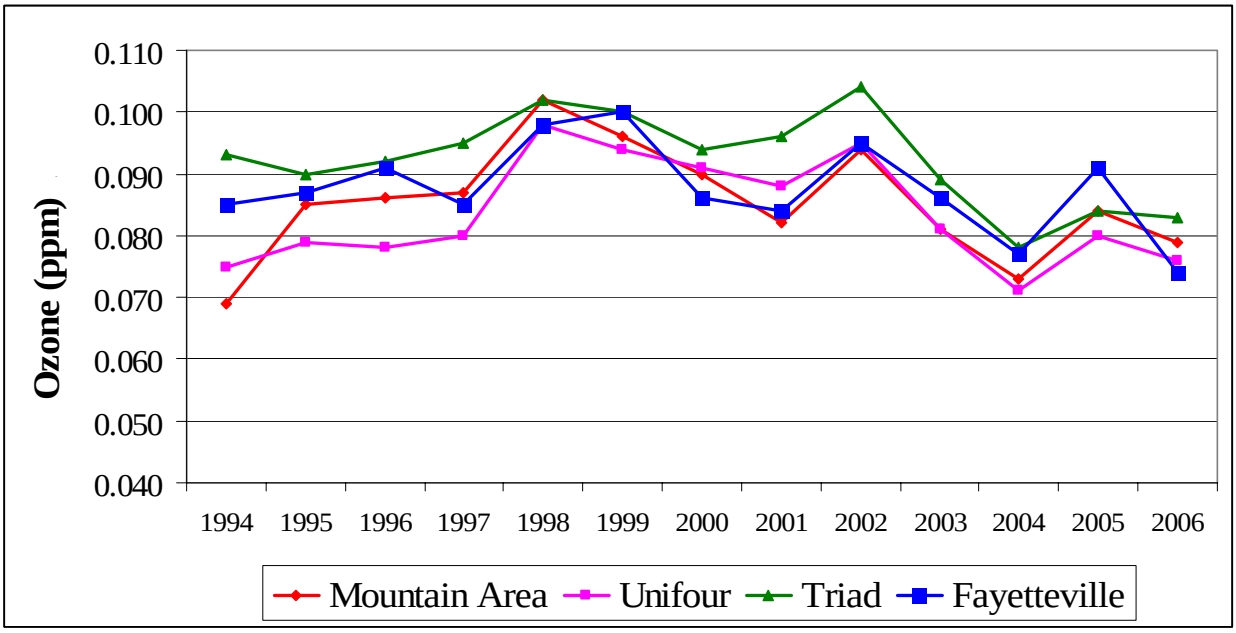

Figure 3. The graph displays the trend in the area-wide maximum 4th highest 8-hour ozone value in parts per million for each EAC area from 1994-2006.

2006 Ozone Season Weather Patterns

Historically, the type of weather conditions that occurred during the 2006 ozone season would have been conducive to ozone formation. Although temperatures were near or slightly below normal, there were a few extended periods with above normal temperatures. Similarly, precipitation was also near or slightly above normal, however the majority of the precipitation occurred with Tropical Storms Alberto and Ernesto.

Much of the state entered the ozone season under drought conditions, which in the past has been favorable for having multiple days with ozone above the NAAQS. Cooler than normal temperatures, with little potential for ozone formation, predominated for the first half of May, and from the middle of August through the end of September. A more active photochemical period occurred from the middle of May through middle of August. Temperatures were seasonably warm with many days with high temperatures above 90 F. Rainfall was mostly below normal, with the notable exception of Tropical Storm Alberto, which moved through

central North Carolina in the middle of June and brought heavy rain to the eastern Piedmont and coastal plain, and lesser amounts of rain to the west. The Cumberland County EAC was most impacted by the rains from Alberto. High soil moisture from Alberto's rains likely aided in cloud formation for weeks following the storm, which possibly helped to hinder ozone formation.

Many major metropolitan areas throughout the southeast experienced multiple days with ozone above the NAAQS. By comparison, the EAC areas had relatively less ozone. The Triad EAC area had 6 days with exceedances, the Asheville Mountains EAC had 2 days with exceedances, and the Cumberland County and Unifour EAC areas had none. All EAC areas observed a below average number of exceedance days compared to the 1994-2005 average. Weather conditions overall were favorable for an average number of exceedance days from the Triad westward, and less favorable to the east.

IV. Overall Summary and Conclusions

The annual review of stationary point source emissions shows North Carolina EAC areas generally experienced decreases in NOx emissions for the period evaluated. The Cumberland County EAC area was the only area experiencing an increase in NOx emissions (7.7%); however, this increase was below the action trigger. 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. Furthermore, the 3-year design values for the two EAC areas did not increase. 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. Although a few individual counties had small increases in VMT growth rates, all counties were below the ten percent action trigger threshold.

The 3-year design values have not increased since the NCDAQ submitted the EAC SIP in December 2004. In fact, 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 at this time.

Appendix C
(NC DAQ Report)

Vehicle Miles Traveled (VMT) Grow Data

Note: The following VMT data was generated by the North Carolina Department of Transportation (NCDOT) based on vehicles registered with the North Carolina Division of Motor Vehicles. Travel demand models are used by metropolitan planning organizations to calculate speeds and VMT for their local coverage area. The VMT used in the Early Action Compact State Implementation Plan (EAC SIP) attainment demonstration modeling was derived from the travel demand model for Davidson, Forsyth and Guilford Counties. The VMT for the remaining counties is from NCDOT data that is reported to the Federal Highway Administration (FHWA) to estimate lane miles and VMT for national highway systems. On average, VMT derived from the EAC SIP travel demand models are 25%-40% higher than NCDOT VMT data.

Since travel demand data is not available every year for this annual tracking report, the average annual VMT growth rate used in the EAC SIP is compared to the average annual VMT growth rate of the NCDOT data submitted to the FHWA. Therefore the data in Table C1 contains travel demand model VMT estimates for both 2000 and 2007, while the data in Table C2 contains only the NCDOT data submitted to the FHWA.

Table C1: Annual VMT Growth Rate Based on 2000 - 2007 EAC SIP

	2000 VMT	2007 VMT	Annual VMT Growth Rate
Fayetteville Area			
Cumberland	7,578,450	8,460,602	1.66
Hickory Area			
Alexander	594,210	755,500	3.88
Burke	2,518,540	2,873,401	2.01
Caldwell	1,651,220	2,010,100	3.10
Catawba	4,314,040	5,138,099	2.73
Total Area	**9,078,010**	**10,777,100**	**2.67**
Mountain Area			
Buncombe	5,736,440	6,603,801	2.16
Haywood	2,244,520	2,625,298	2.42
Madison	492,930	571,879	2.29
Total Area	**8,473,890**	**9,800,978**	**2.24**
Triad Area			
Alamance	3,598,930	4,176,499	2.29
Caswell	619,580	723,600	2.40
Davidson	4,112,280	4,924,498	2.82
Davie	1,245,080	1,464,200	2.51
Forsyth	9,595,433	11,153,970	2.32
Guilford	14,349,184	16,533,141	2.17
Randolph	3,675,570	4,414,300	2.87
Rockingham	2,469,390	2,874,500	2.34
Stokes	924,340	1,066,800	2.20
Surry	2,485,200	2,937,501	2.60
Yadkin	1,330,380	1,544,000	2.29
Total Area	**44,405,367**	**51,813,009**	**2.38**

Table C2: Annual VMT Growth Rate Based on 2000-2005 Universe Data

	2000 VMT	2005VMT	Annual VMT Growth Rate
Fayetteville Area			
Cumberland	7,578,450	7,982,300	1.07
Hickory Area			
Alexander	594,210	688,480	3.17
Burke	2,518,540	2,631,000	0.89
Caldwell	1,651,220	1,874,550	2.71
Catawba	4,314,040	4,716,160	1.86
Total Area	**9,078,010**	**9,910,190**	**1.83**
Mountain Area			
Buncombe	5,736,440	6,279,200	1.89
Haywood	2,244,520	2,387,290	1.27
Madison	492,930	550,500	2.34
Total Area	**8,473,890**	**9,216,990**	**1.75**
Triad Area			
Alamance	3,598,930	3,667,550	0.38
Caswell	619,580	617,390	-0.07
Davidson	4,112,280	4,334,010	1.08
Davie	1,245,080	1,369,470	2.00
Forsyth	7,882,840	8,546,220	1.68
Guilford	10,740,240	11,262,150	0.97
Randolph	3,675,570	3,815,180	0.76
Rockingham	2,469,390	2,482,350	0.10
Stokes	924,340	996,810	1.57
Surry	2,485,200	2,437,000	-0.39
Yadkin	1,330,380	1,384,960	0.82
Total Area	**39,083,830**	**40,913,090**	**0.94**

Appendices

A-J

Appendix A

Conover pumps local Biodiesel

Written by Sarah Newell (O-N-E Staff Reporter)

Dale Hunsucker with B&B transport pumps biodiesel into the Conover storage area.
The city of Conover took its first step in a local partnership Friday, when it received 6,000 gallons of bio-diesel from a Lenoir manufacturer.

Conover initially started using bio-diesel fuel in 31 of its off-road vehicles and 23 of its on-road vehicles on June 23, with fuel from Charlotte. However, when the city learned that Foothills Bio-Energies in Lenoir was going to begin making bio-diesel, it decided to make the switch.

"This is our first effort to have locally owned, locally grown and locally distributed bio-diesel," said Conover Manager Donald Duncan. "You get more cooperation locally, because the company has a stake in the community."

The 6,000 gallons of B-20, a blend of 20 percent bio-diesel and 80 percent ultra low sulfur diesel (ULSD) diesel, is the first shipment Foothills Bio-Energies has made, at Conover's request.

"We wanted the first load. We really stretched our last load of bio-diesel (from Charlotte), waiting to get this," Duncan said, adding that he's really interested in bio-diesel and alternative energy. "It's great that personal, private and public interests all lined up."

Bio-diesel is much better for the environment than traditional diesel, which has carcinogens and sulfur in it. North Carolina is the fifth-largest use of bio-diesel, but until a few years ago, it primarily imported it, usually from California. Foothills owners Randy Dellinger and Don Barrier decided to change that, by building a facility in Lenoir to produce bio-diesel. By the end of 2006, there will be four facilities in North Carolina that produce it.

With Catawba County's non-attainment status for air quality because of particulate matter, Conover is hoping the bio-diesel it uses will help lower it, as well.

Conover's not the only city in Catawba County that uses bio-diesel. Duncan said that about a month after Conover began using it, Hickory switched, as well.

Beginning Friday, bio-diesel will be available to the general public in Catawba County: Bumgarner Oil. The bio-diesel it purchased will be sole at the Cubbard Express on N.C. 127 in Hickory.

Appendix B

Biodiesel in Your Region

An Informative Session to Learn About Biodiesel in the Greater Unifour Area
Designed for Fleet Managers and Other Interested Parties

Sponsored by: Foothills Bio-Energies and Bumgarner Oil Company

December 5, 2006

11 AM to 1 PM

Lunch Provided

Door Prizes

Where: JE Broyhill Civic Center, Highway 321 in Lenoir, NC Room 2061

Please RSVP by no later than Wednesday 11-29-06 to info@foothillsbio-energies.com
or by phone to 828-759-7101

Appendix C

Hickory Daily Record

Local air quality looks better

Hickory Daily Record
Tuesday, August 15, 2006

Ozone is a product of nature. When pollution enters the equation, ozone goes wild. It's a big factor in smog, overall air quality and many human respiratory ailments.

The recent heat wave should have produced excessive ozone levels because of the Hickory area's deteriorating air quality.
The ozone levels stayed down, an indication that our air quality isn't quit as bad as feared.

Our air is still dirty. But several efforts to improve the quality appear to be working. Because they are working, the four counties that make up the Hickory Metropolitan Statistical Area will not fall under harsher federal environmental regulations.

Two of the steps that contribute to lessening pollution are the clean smokestacks act that has reduced industrial emissions - primarily from coal-fired industry - and vehicle inspections that ensure emissions controls are working properly.

Another factor is a new pollution-containment strategy implemented by the Tennessee Valley Authority. That federal and local officials believe the TVA approach has affected the Hickory area adds credence to local officials' claims that all our air pollution is not self-generated.

We're not going to be rid of vehicle emissions inspections any time soon - maybe never - but our air is not getting worse. Federal officials considered limiting industrial projects and highway projects if ozone levels elevated.

They did not. The restrictions are on hold.

We've made a start on improving our air. We must use every available means to continue progress.

Some don't have resources to cope

A survey has found that people who evacuated ahead of Hurricane Katrina have fared better than unprepared residents who were rescued from their flooded homes.

People who evacuated on their own and made preparations for escaping the flooding are also doing better than folks who did little in the face of Katrina's wrath.

We're not surprised. People who are attuned to coping usually do better in emergencies that those who make a habit of being unprepared.

However, we must point out that many of the people who had to be rescued from New Orleans and other coastal areas had few resources to initiate any level of preparedness.

These are the people we must ensure have the means to evacuate when another disaster looms like Katrina.

We're still not happy with the way the New Orleans transportation system and some employees were utilized prior to Katrina's landfall. But we must face the fact that some people need help - that it's almost impossible for them to cope alone, no matter what the danger.

This story can be found at:
http://www.hickoryrecord.com/servlet/Satellite?pagename=HDR/MGArticle/HDR_BasicArticle&c=MGArticle&cid=1149189977676

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Appendix D

Hickory Daily Record

Ozone levels look good for county

EPA judges regions based on three-year average.

BY ANDREW MACKIE
RECORD STAFF WRITER
Friday, August 11, 2006

HICKORY - The heat has finally abated - for now - and the Hickory region's air quality survived unscathed. It's good news for manufacturing companies and transportation projects.

The region remained within federal ozone limits each day this summer, despite sweltering heat. Therefore, the region should remain under ozone federal limits for 2006, meaning it would relinquish a designation that would have placed restrictions on industry expansion and road projects next year.

The U.S. Environmental Protection Agency uses a three-year average of ozone readings. The Hickory region has monitors in Lenoir and Taylorsville.

The four-county Hickory region exceeded federal standards a few years ago, but the associated penalties with it were delayed due to creation of a collaborative project to reduce ozone.

amackie@hickoryrecord.com | 322-4510 x5407 or 304-6914

This story can be found at:
http://www.hickoryrecord.com/servlet/Satellite?pagename=HDR/MGArticle/HDR_BasicArticle&c=MGArticle&cid=1149189946438

Appendix E

News Release

Sept. 21, 2006

Duke Energy Carolinas Breaks Ground on $425 Million Allen Steam Station Emissions "Scrubber"

CHARLOTTE, N.C. – Duke Energy Carolinas has broken ground on a project that will reduce sulfur dioxide emissions by approximately 95 percent at Allen Steam Station, a 1,140-megawatt power plant located on the shores of Lake Wylie in Belmont.

"This project demonstrates our commitment toward improving air quality in North Carolina, helped by the ingenuity and hard work of companies such as Duke Energy," said Bill Ross, secretary of the North Carolina Department of Environment and Natural Resources. "North Carolina's landmark Clean Smokestacks Act calls for substantial emissions reductions at coal-fired power plants across the state, and Duke Energy has responded to that challenge. As a result, our citizens will breathe cleaner air and enjoy a better quality of life."

The project is expected to cost approximately $425 million and is the third of four power plants Duke Energy is installing sulfur dioxide scrubbers on in North Carolina. The projects stem from the passage of the state's 2002 "Clean Smokestacks" legislation.

"We are eager to move ahead with this scrubber project, which will substantially reduce Allen Steam Station's emissions," said Bill Mc Collum, Duke Energy's group vice president for regulated generation. "The project builds on other emissions work across our fleet and will ensure the Allen plant continues to provide our customers with competitively priced power for decades to come.

"We expect to complete the initial phase of our first scrubber project at Marshall Steam Station in Catawba County this November, and we have completed 35 percent of our scrubber project at our Belews Creek Steam Station in Stokes County," Mc Collum added.

Duke Energy will complete its Marshall, Belews Creek, Allen and Cliffside steam station scrubber projects by the end of 2010 – three years before the 2013 schedule outlined in the Clean Smokestacks legislation. When all four scrubber projects are complete, approximately 90 percent of Duke Energy's coal production in the Carolinas will have sulfur dioxide emission scrubbers installed.

These investments are in addition to the company's work to comply with the federal Clean Air Act

that has dramatically reduced nitrogen oxide emissions. In addition, all of Duke Energy Carolinas' smaller coal plants are installing or have recently installed advanced technology to reduce nitrogen oxide emissions.

The scrubber removes sulfur dioxide by injecting a mixture of limestone and water into the emissions stream. The Allen Steam Station project is expected to be completed in 2009.

Duke Energy's coal-fired power plants have been ranked among the nation's most efficient for more than 30 years, which reduces fuel costs and lowers overall emissions.

Duke Energy is a diversified energy company with a portfolio of natural gas and electric businesses, both regulated and unregulated, and an affiliated real estate company. Duke Energy supplies, delivers and processes energy for customers in the Americas, including 28,000 megawatts of regulated generating capacity in the United States. Duke Energy's Carolinas operations include a diverse mix of nuclear, coal-fired, natural gas and hydroelectric generation that provides 19,900 megawatts of safe, reliable and competitively priced electricity to more than 2.2 million electric customers in a 22,000 square mile service area of North Carolina and South Carolina. Headquartered in Charlotte, N.C., Duke Energy is a Fortune 500 company traded on the New York Stock Exchange under the symbol DUK. More information about the company is available on the Internet at: http://www.duke-energy.com/.

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Appendix F

ALEXANDER COUNTY
EMERGENCY MEDICAL SERVICE
2430 NC Hwy 90 E
Taylorsville, North Carolina 28681
(828) 632-2241

TO: EMS Supervisors / All Staff

FROM: Bradley Earp

SUBJECT: High Heat Index / High Ozone Action Days

DATE: July 19, 2006

The following guides should be followed by EMS staff on all High Heat / High Ozone days:

- Fuel trucks at the beginning of the shift or after 6 PM. Only fuel units at other times as absolutely necessary.
- Avoid being on the road between the hours of 2 PM and 6 PM, unless you are actually on a call or an assigned duty. (Lunch or Supper should be arranged to avoid this time frame.)
- Carry your coolers on your units with bottles of water or electrolyte drinks.
- Do outdoor duties in the morning hours.
- Notify the EMS Office of any truly heat-related emergencies you encounter.
- Watch out for all emergency workers on working calls.
    - Encourage the rotation of staff on situations where the scene time is extended; such as fire calls, motor vehicle accidents with entrapments, and carry-outs.
    - Call for shelters and drinking water for rehab areas on extended events.

Appendix G

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).

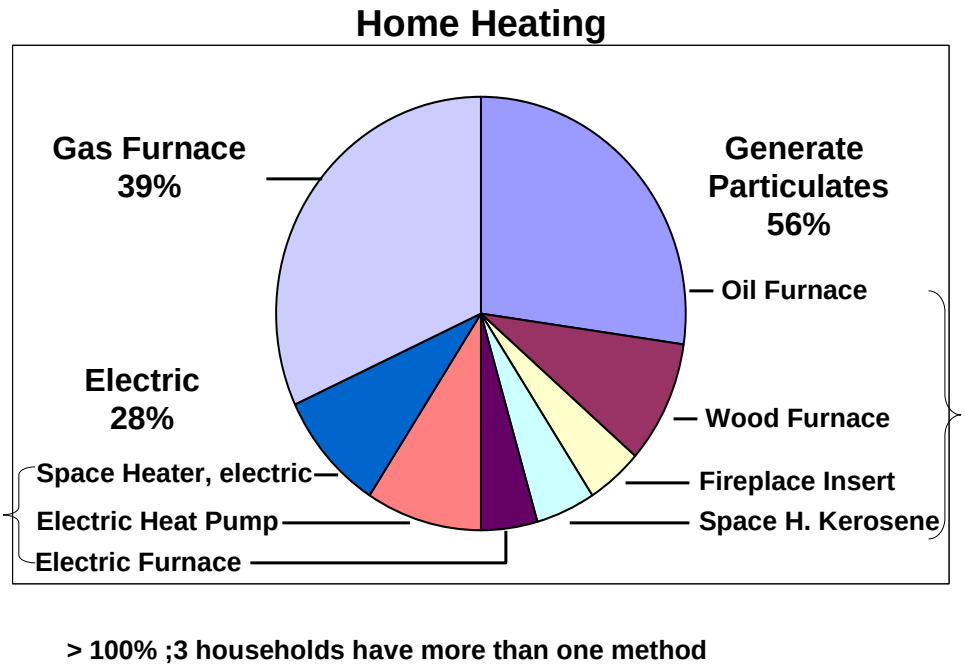

Figure 1. Home heating methods used by residents near the air quality monitoring site in Hickory, NC. N=18. Some residences used more than one source.

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.

Appendix H

Hickory Daily Record

Region takes a breather

Federal government extends deadline for meeting ground level ozone standards.

BY ANDREW MACKIE
RECORD STAFF WRITER
Friday, December 15, 2006

HICKORY -- Unless a steamy summer is in Hickory's future, the region should avoid penalties for excessive ground level ozone.

That will be especially good news for industry and transportation projects.

The federal government recently extended a deadline for meeting ground level ozone standards a year, until April 2008.

If the area meets ozone standards by that date, the region will not be designated in violation of federal air quality standards.

Ground level ozone is formed when pollutants emitted by cars, power plants, chemical plants and other sources react to sunlight. Excessive ozone can lead to health problems, especially among the young and old.

The extension was granted from the region's success from a collaborative program called an Early Action Compact.

And some old-fashioned good luck.

The compact included several strategies to reduce ozone:

• Alternative fuels. Many governments and some private companies are moving toward fleets that run on bio-diesel fuel.

• Land use measures. Several cities upgraded landscaping requirements.

• Issuance of an ozone forecast. Residents are encouraged to stay indoors during high ozone days and fuel their vehicles after 6 p.m.

Also helping the cause were mild summers in recent years.

Federal regulations use a three-year average of ozone exceedances. There were no violations during 2006.

John Tippett, senior planner with the Western Piedmont Council of Governments, is optimistic.

Violations would have deterred industry expansions and highway projects.

“There is no one silver bullet,” he said. “There is just a whole range of factors leading to lower ozone.”

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This story can be found at:
http://www.hickoryrecord.com/servlet/Satellite?pagename=HDR/MGArticle/HDR_BasicArticle&c=MGArticle&cid=1149192191990

Appendix I

Hickory Daily Record

Find earth-friendly fuels

Energy-efficient homes, businesses will be on display.

By Josh Yoder
Record Staff Writer
Thursday, October 5, 2006

Hickory - Want to go green?

On Saturday, folks can learn about solar panels, biodiesel fuel, hybrid vehicles and other earth-friendly energy sources.

The Catawba Valley Sustainable & Renewable Energy Tour will showcase several examples of energy-efficient "green" homes, as well as businesses that produce alternative fuels.

The Catawba Valley Heritage Alliance is sponsoring the tour, a national annual event being held for the first time in the area.

Registration begins at 8:30 a.m. at the Western Piedmont Council of Governments. A short documentary film called "Kilowatt Ours" will be shown, and several gas-electric hybrid cars will be on display.

There are about a dozen spots on the tour. Highlights include the Foothills Biofuels facility, a new, Lenoir-based business that produces biodiesel from regional agricultural resources; Western Piedmont Community College, which uses solar panels and windmills; and Habitat for Humanity's Zero Energy Home, which incorporates many energy-efficient features.

Attendees are urged to carpool, and shuttles will be available for those who need transportation.

Kenyon Kelly, president of the Heritage Alliance, said the tour is a prime opportunity to learn about alternative energy sources.

"The main thing is that renewable energy is available, and that it's a lot more accessible than one might assume," Kelly said.

want to go?

What: The Catawba Valley Sustainable and Renewable Energy Tour

When: Registration begins at 8:30 a.m.

Where: Tour starts at the Western Piedmont Council of Government, 736 Fourth St., SW, Hickory

Cost: Free

For more information: call 217-8040 or www.ncsustainableenergy.org

This story can be found at:
http://www.hickoryrecord.com/servlet/Satellite?pagename=HDR/MGArticle/HDR_BasicArticle&c=MGArticle&cid=1149191002070

Appendix J

The Economics and Benefits of Conservation-Based Development

Two seminars featuring Randall Arendt

November 14, 2006 - Hickory, NC
November 15, 2006 - Charlotte, NC

Registration Deadline November 7, 2006

About the workshops:

Managing growth as our cities spread into rural settings is a challenge as communities struggle to balance density with the desire to preserve unique characteristics of the landscape. These workshops will present a process and techniques that enable developers and local officials to work together to accomplish economic and environmental goals in creating full-density subdivision developments that preserve open spaces. Workshop leader, Randall Arendt, will describe how this design process can fit into the local regulatory framework through specific provisions in comprehensive plans, zoning ordinances and subdivision regulations. For more information about the workshop leader, visit www.greenerprospects.com.

Sponsors:

Catawba Lands Conservancy
Foothills Conservancy of NC
Katawba Valley Land Trust
LandTrust for Central NC
Nation Ford Land Trust
Trust for Public Land
NC State University, Forestry & Environmental Outreach Program
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at Lenoir-Rhyne College
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