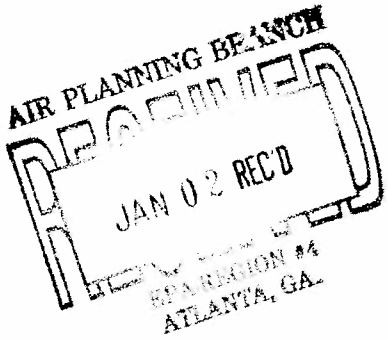
Buncombe County Government

Planning and Development
46 Valley Street
Asheville, NC 28801

Jon E. Creighton
Assistant County Manager/Planning Director
Telephone (828) 250-4830
Fax (828) 250-6086

December 28, 2007



Richard A. Schutt
Air, Pesticides, and Toxic Management Division
United States Environmental Protection Agency
Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104

Re: December 28 Submittal of the Mountain Area EAC (North Carolina)

Dear Mr. Schutt:

I am pleased to submit the latest Early Action Compact Report for the December 31, 2007 submittal date.

The Mountain Area EAC covers three counties in the Western North Carolina region and the municipalities therein: Buncombe County (Asheville), Madison County, and Haywood County.

In accordance with the EAC protocols, this letter is to fulfill the final EAC milestone. The North Carolina Division of Air Quality has certified that the 2005 through 2007 ozone ambient monitoring data has been quality assured. This letter will serve as a certification that the Mountain Area EAC has worked actively to meet the objectives outlined in the compact. We have seen our air quality improve in recent years, and strive to continue along this path.

In addition to modeled control measures referenced in the attached letter from Keith Overcash, P.E., the Mountain Area EAC committed to programs that will reduce emissions, and has worked hard to bring air quality issues to the forefront. The Mountain Area EAC believes that it has met all of the requirements of the EAC process and respectfully requests that you commence the federal process to designate the Mountain Area as attainment for the 8-hour standard.

Please note the attached letter from Keith Overcash, P.E., Director of the North Carolina Department of Environment and Natural Resources, certifying the ozone ambient modeling data.

If we can be of further assistance regarding this report, please do not hesitate to contact Leigh DeForth at (828) 250-4832.

Sincerely,

Jon Creighton
Assistant County Manager / Buncombe County Planning Director

CC: Sheila Holman
Laura Boothe
Leigh DeForth, Buncombe County Planning

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

Michael F. Easley, Governor

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

December 19, 2007

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

Dear Mr. Palmer:

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

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

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

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

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

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

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

Sincerely,

B. Keith Overcash, P.E.

BKO:lab

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

MOUNTAIN AREA

EARLY ACTION COMPACT

December 28, 2007 Voluntary Submittal to

United States Environmental Protection Agency

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

The Mountain Area Early Action Compact is comprised of the three Western North Carolina Counties of Buncombe, Haywood, and Madison as well as municipalities within those Counties. Two Counties, Madison and Buncombe, are part of a decades old Metropolitan Statistical Area in the region. Haywood County is part of the newly expanded MSA. These sister governments have all elected to participate in the EAC process. Each desires to improve air quality in our area; to partner with and support State and Federal clean air initiatives; and to avoid the regional consequence of non-attainment.

1. *The following actions have taken place within the three Counties during the past six months.*

The Western North Carolina (WNC) 3 County Region

- The Regional Clean Air Campaign (CAC) organized by the Land of Sky Council of Governments held monthly meetings to plan and implement air quality educational programs in the region.
    - On July 27th, 28th, and 29th, the CAC had a display including a natural gas powered Honda Civic GX at the annual Bele Chere Festival in Asheville. The event is attended by people from throughout the region.

- The Land of Sky Regional Council of Governments Clean Vehicles Coalition (CVC) continued their work during the last 6 months of 2007 to promote the use of alternative fueled and advanced technology vehicles.
    - From August 24-26, the CVC participated in the Clean Air Car Fair at the Southern Energy and Environment Expo. An alternative fuels forum took place on August 25th.
    - Bill Eaker of the Land of Sky Regional Council participated in a radio interview on alternative fuels and clean vehicles with the Clear Channel Company. The interview was broadcast throughout the Region on 5 channels.

- The CVC cosponsored a Biodiesel Conference at AB Tech Enka Campus on November 7th.
- CVC had entries in the Asheville, Waynesville, and Maggie Valley Holiday Parades (Buncombe and Haywood Counties).
- Green Transit secured funding from NC DAQ for biodiesel infrastructure at their Buncombe and Madison County locations.
- Other CVC activities are listed below under the counties where they were held.

Buncombe County and the City of Asheville

- Buncombe County, the City of Asheville, and twelve other local organizations (Basofil Fibers, BorgWarner Turbo Systems, Ohio Electric Motors, Inc., Volvo Construction Equipment North America, Inc., Rockwell Automation, B.V. Hedrick Gravel & Sand Company, Alcan Packaging, Shorewood Packaging Corporation, Warren Wilson College, Land of Sky Regional Council of Governments, Charles D. Owen Manufacturing Company, and Tyco Valves and Controls) are participating in the EPA's ENERGY STAR Million Monitor Drive to conserve electricity and reduce air pollution. A total of 3,056 computer monitors in Buncombe County are being powered down when not in use as part of this program.
- The Buncombe County Schools Transportation Department partnered with the WNC Regional Air Quality Agency and Land of Sky Regional Council of Governments on a proposal to obtain Clean School Bus USA grant funding to replace a diesel school bus with a new plug in hybrid electric diesel bus. Funding was not obtained but other funding sources are being investigated.
- Buncombe County Government obtained an Energy Usage Assessment of County buildings from Advanced Energy in November as a follow up to the recent resolution related to energy conservation measures and plans to increase energy efficiency in County buildings.
- The City of Asheville received the Best Workplace for Commuters designation in July. To earn the designation, the city offers its employee's commuter benefits such as IDs that allow city staff members to ride the bus free, bicycle parking in front of City Hall with showers and lockers for cyclists to change, and an Emergency Ride Home program.
- In July, the City of Asheville began using biodiesel and ethanol blends in their fleet and transit vehicles.
- The Buncombe County Parks and Recreation Department sponsored an air quality presentation for their Senior Sightseers group in July.
- In August, the City of Asheville signed a partnership agreement with Warren Wilson College to reduce greenhouse gas emissions. The reduction of greenhouse gas emissions will have the co benefit of reducing nitrogen oxide emissions and ultimately, ozone pollution.
- The NC DOT began using B20 and E10 at its Buncombe County fueling depot during the reporting period.
- Clean Air Campaign members had a booth at the Biltmore Company Health Fair in July.

- In August, the WNC Regional Air Quality Agency did an air quality update presentation for the local Council of Independent Business Owners, and sponsored a speaker's bureau training for the NC Green Power program.
- On August 28th, the CVC held their monthly meeting at the local CNG conversion facility. A demonstration on CNG vehicles took place and a tour of the facility was held. The September meeting included test drives of electric vehicles; media coverage of the event was successful. They are in the process of planning a CNG conference that will take place in Asheville in the spring of 2008.
- The mountain region's first E-85 pump opened in Buncombe County on November 7th at the Asheville Airport exit off of I-26.
- Blue Ridge Biofuels opened several more biodiesel pumps in Buncombe County during the last six months of 2007.
- The CVC had a display at the Advantage West Innovations Conference on Energy Businesses Development on December 6th.
- During the reporting period, NC DAQ funding was awarded to the Town of Black Mountain for the purchase of an electric vehicle,
- The NC DAQ has given air quality presentations including tips to reduce pollution in several schools in Buncombe County during the last 6 months of 2007. The WNCRAQA has participated in a school career fair and held a field trip to the Agency for two 7th grade science classes during the last six months of 2007. Both agencies participated in the Ground Level Ozone Advanced Air Quality Workshop for NC Educators in August.

Haywood County

- The CVC had a display including a hybrid electric vehicle at the Haywood Fun Festival in August.
- The CVC had a display at the Haywood County Fair from September 24-30.
- The CVC also had a display at the Haywood Apple Festival in October.
- The NC DAQ did air quality presentations for 5th graders at the Haywood County Soil and Water group's field day events in October.
- The Great Smoky Mountains National Park secured funding from the NC Solar Center for 2 electric vehicles.

Madison County

- Madison County Government is participating in the EPA's ENERGY STAR Million Monitor Drive campaign with the other organizations in Buncombe County. Madison County has pledged to power down 240 computer monitors when not in use as part of this program.

2. *Air Quality Analysis*

Assessment of Air Quality for Mountain EAC

Compact areas must certify progress toward attainment since their previous milestone, e. g., continued implementation and progress toward improvement in air quality and emissions reductions. On November 29, 2006, The U.S. Environmental Protection

Agency (USEPA) deferred the effective date of the nonattainment designations for the counties participating in the three other Early Action Compacts in NC to April 15, 2008. The Mountain Area Early Action Compact was not included in the final deferral notice since it was designated as attainment in April of 2004. The three counties included in the Mountain Area Compact chose to continue their EAC agreement for the benefit of public health.

The North Carolina Division of Air Quality (NCDAQ) evaluated design value (DV) trends and ozone exceedance trends from 1994 to 2007 to determine if the Mountain EAC area shows decreases in ozone formation. 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 area 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 area for the most recent ozone season, compared to the number of exceedances at each monitor from 1994 to present.

The National Ambient Air Quality Standard (NAAQS) for 1-hour ozone is 0.12 parts per million (ppm). When a monitor measures ozone above 0.124 ppm (per rounding convention), an exceedance of the NAAQS occurs. The design value for 1-hour ozone is calculated by rank ordering the highest monitor reading for a three-year period and the 4^{th} highest value is the design value for that monitor. The design value for an area would be the highest monitor design value.

The NAAQS for 8-hour ozone is 0.08 ppm. When a monitor measures ozone above 0.084 ppm, an exceedance of the NAAQS occurs. The design value for 8-hour ozone is calculated by averaging the annual 4^{th} highest daily maximum for three consecutive years for a monitor. The design value for an area would be the highest monitor design value.

In the sections below the four matrices listed above are discussed.

1-hour Design Value Trends

In the Mountain EAC area, 1-hour ozone design values peaked during the 1997-1999 and 1998-2000 periods, then decreased consistently through the 2002-2004 period, with a

greater decrease in the 2003-2005 period (see Table 1 below). The design values are presented in parts per million and the light shading indicates that no data was available.

Table 1: 1-Hour Ozone Design Values for Mountain EAC Area

Monitoring Sites	AIRS ID	Design Value Summary (ppm)											
		94-96	95-97	96-98	97-99	98-00	99-01	00-02	01-03	02-04	03-05	04-06	05-07
Frying Pan	37-087-0035	0.095	0.095	0.106	0.107	0.107	0.104	0.098	0.098	0.098	0.091	0.091	0.092
Purchase Knob	37-087-0036	0.094	0.106	0.103	0.105	0.103	0.102	0.104	0.104	0.104	0.091	0.091	0.092
Bent Creek	37-021-0030	0.085	0.086	0.108	0.111	0.111	0.106	0.106	0.103	0.103	0.092	0.092	0.092
Waynesville	37-087-0004				0.09	0.094	0.094	0.095	0.091	0.091	0.084	0.082	0.084

Figure 1 below shows the trend in highest monitor 1-hour DVs for the Mountain EAC area. The graph shows the peak in the 1997-1999 and 1998-2000 DV period. After that, design values decrease consistently and a significant drop is seen in the 2003-2005 DV, after which the values level off.

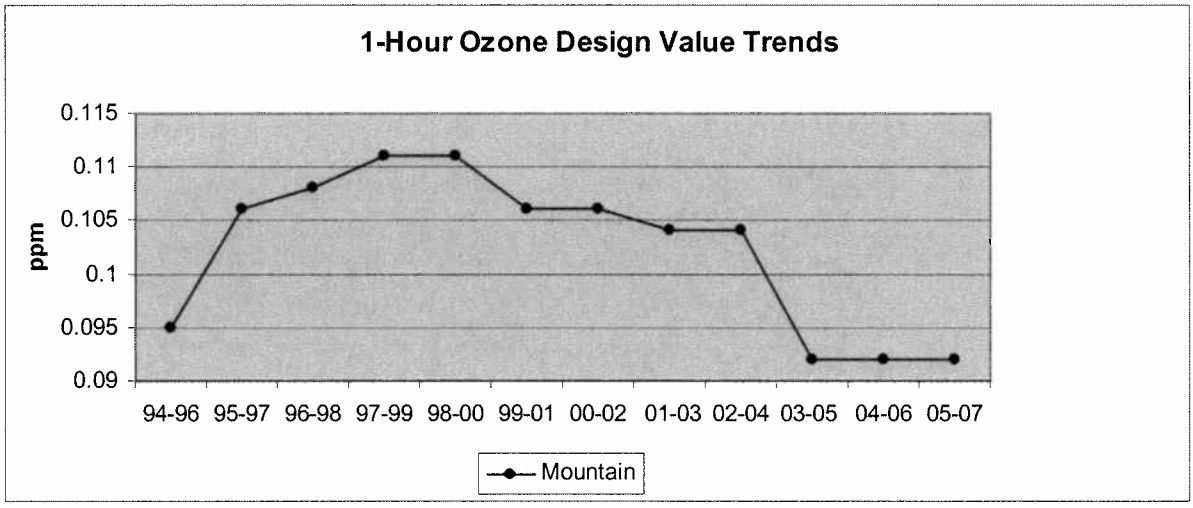


Figure 1: Trend in the area-wide 1-hour design values (in parts per million) for the Mountain EAC area from 1994 to 2007

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 and a significant drop in 2003-2005, followed by a leveling off. As for the 2002-2004, 2003-2005, and 2004-2006 DVs, all were 0.082 ppm or less, with the highest DV being .079 for the 2005-2007 period. The

design values are presented in parts per million, with design values exceeding the standard highlighted in orange. Light shading indicates that no data was available.

Table 2: 8-Hour Ozone Design Values for the Mountain EAC Area

Monitoring Sites	AIRS ID	Design Value Summary (ppm)											
		94-96	95-97	96-98	97-99	98-00	99-01	00-02	01-03	02-04	03-05	04-06	05-07
Frying Pan	37-087-0035	0.079	0.085	0.091	0.094	0.094	0.087	0.085	0.082	0.080	0.076	0.078	0.079
Purchase Knob	37-087-0036		0.083	0.085	0.090	0.090	0.087	0.087	0.085	0.082	0.078	0.076	0.078
Bent Creek	37-021-0030	0.073	0.075	0.079	0.083	0.088	0.083	0.085	0.078	0.077	0.074	0.074	0.074
Waynesville	37-087-0004						0.080	0.080	0.079	0.076	0.072	0.069	0.072

Figure 2 below shows the trend in the highest monitor 8-hour DVs for the Mountain EAC area. The graph shows the peak in the 1997-1999 and 1998-2000 design values. The Mountain area drops below the 8-hour standard by the 2002-2004 period, declines more during the 2003-2005 period, the levels are roughly the same for the 2004-2006 period, and increase slightly during 2005-2007. As discussed in the most recent NC DAQ Tracking Report, the 2007 season was very conducive to ozone formation, with warm temperatures and relatively little precipitation.

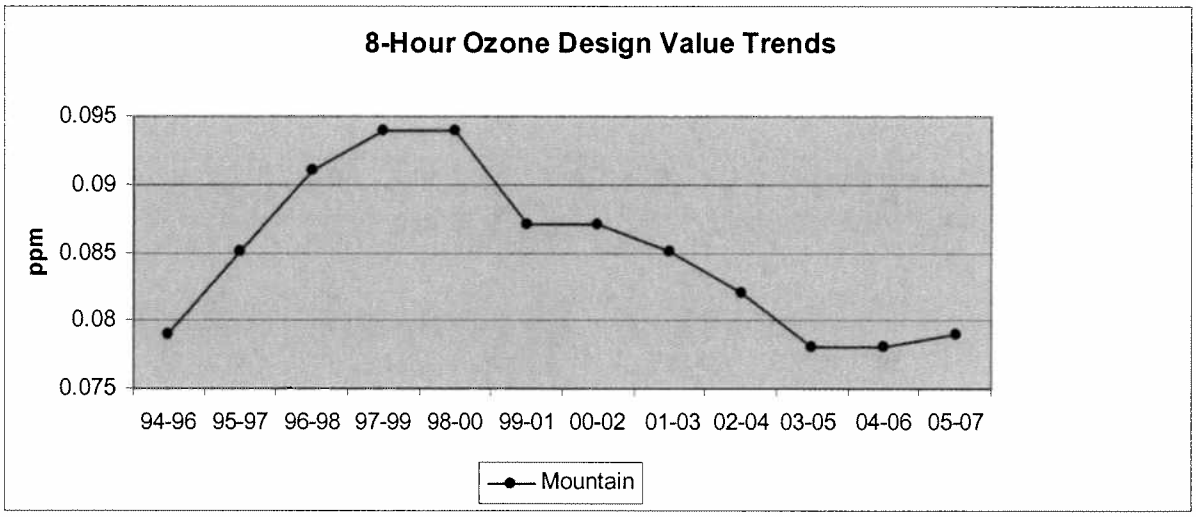


Figure 2: Trend in the area-wide 8-hour design values (in parts per million) for the Mountain EAC area from 1994 to 2007

1-hour & 8-Hour Ozone Exceedance Trends

An exceedance of the 1-hour standard occurred in the 1998 season at the Bent Creek monitor in the Mountain EAC area. There have been no exceedances of the 1-hour standard in the last 8 years in the Mountain EAC area (see Table 3 below). Light shading indicates that no data was available for the period.

Table 3: The Number of 1-Hour Ozone Exceedances Within the Mountain EAC Area

Number Of 1-Hour Exceedances Per Year		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bent Creek	37-021-0030	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Frying Pan	37-087-0035	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchase Knob	37-087-0036		0	0	0	0	0	0	0	0	0	0	0	0	0
Waynesville	37-087-0004						0	0	0	0	0	0	0	0	0

The number of 8-hour ozone exceedances (Table 4) shows a downward trend since peaking in 1998 and 1999 in the Mountain EAC area. The Mountain EAC area has had only three exceedances since 2003, one in 2005, one in 2006, and one in 2007. Light shading indicates that no data was available for the period and orange highlighting indicates a monitor with four or more exceedances for that year.

Table 4: The Number of 8-Hour Ozone Exceedances Within the Mountain EAC Area

Number Of 8-Hour Exceedances Per Year		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bent Creek	37-021-0030	0	0	0	0	5	2	7	1	7	0	0	1	0	0
Frying Pan	37-087-0035	0	5	5	4	23	24	4	1	13	0	0	0	1	1
Purchase Knob	37-087-0036		4	1	7	12	19	5	0	18	0	0	0	0	0
Waynesville	37-087-0004						1	3	0	2	0	0	0	0	0

Conclusions

The Mountain EAC area has shown significant decreases in both the 1-hour and 8-hour ozone design values since 2002. In fact, the summers of 2005, 2006, and 2007 were generally hot and dry and none of the Mountain area monitors had more than one exceedance of the 8-hour ozone standard. The USEPA allows three exceedances to be discounted when calculating the design value. The Mountain EAC has met the December 2007 milestone of having a design value below the 8-hour ozone standard.

3. Expected Emissions Reductions

- Open burning ban and ozone action days, implemented in June 2004:
  i. VOC Reduction of 0.5 TPD
  ii. NOx Reduction of 0.4 TPD

- Expand vehicle I&M, implemented in July 2005:
  i. VOC Reduction of 0.6 TPD
  ii. NOx Reduction of 0.7 TPD

- Progress Energy has installed and is operating 2 SCRs and 2 Scrubbers at the Asheville plant to comply with the NC Clean Smokestacks Act.
    i. NOx Reduction of 8.2 TPD (The Unit 1 SCR began operating in June of 2006. The Unit 2 SCR began operating in May of 2007. The 2004-2006 NOx emissions were approximately 4,500 tons per year. Estimated 2007 NOx emissions are 1,500 tons per year, resulting in a reduction of approximately 3,000 tons per year.)