



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF AIR POLLUTION CONTROL  
9<sup>TH</sup> FLOOR L & C ANNEX, 401 CHURCH STREET  
NASHVILLE, TENNESSEE 37243-1531

December 21, 2007

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

Dear Mr. Palmer:

I am enclosing for EPA's review and approval five (5) copies of the December 2007 Attainment and Milestone Report for Tennessee's Early Action Compact (EAC) Areas in Hamilton County, Middle Tennessee, and Tri-Cities. Electronic copies were submitted December 21, 2007. The state is required to submit two letters to satisfy EAC protocol. The first letter certifying the 2007 8-hour ozone ambient air monitoring data for each EAC area has been quality assured and entered into the Air Quality System. A copy of this letter submitted to EPA dated December 5, 2007 is enclosed with this submittal.

To satisfy the second EAC protocol requirement, enclosed you will find the EAC milestone reports for each EAC area and all applicable control measures have been implemented and maintained through December 2007. The state has certified that the 2005 through 2007 ozone data has been quality assured, shows attainment, and all of the EAC areas have been successful in attaining the 8-hour ozone NAAQS standard prior to December 31, 2007.

With this final EAC submittal, it is believed that the state has provided the necessary documentation showing that all EAC areas in the State of Tennessee have achieved attainment of the 8-hour ozone standard. If any additional information is needed or if you have questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Barry R. Stephens".

Barry R. Stephens, P.E., Director  
Division of Air Pollution Control  
Department of Environment & Conservation

Enclosures

Copy to:

Kay Prince, Dick Schutt, Jane Spann EPA Region IV  
TN Air Pollution Control Board Members  
Local Air Pollution Control Program Directors



STATE OF TENNESSEE  
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
DIVISION OF AIR POLLUTION CONTROL  
9TH FLOOR, L & C ANNEX  
401 CHURCH STREET  
NASHVILLE, TN 37243-1531

June 27, 2007

Certified Mail #: 7007 0220 0000 1425 2772  
*Return Receipt Requested*

David Lutz  
Data Certification Contact  
US EPA (D304-06)  
Ambient Air Monitoring Group  
Research Triangle Park, NC 27711

Dear Mr. Lutz:

The State of Tennessee and its four local air pollution control programs have completed entry of their 2006 ambient air quality data into the Air Quality Subsystem (AQS).

The purpose of this letter is to certify to the EPA that the ambient concentration data and the quality assurance data are completely submitted to AQS and that the ambient data are accurate to the best of our knowledge taking into consideration the quality assurance findings. An electronic copy of this letter and the referenced attachments will follow by email.

Should you have any questions regarding this data, please feel free to call Mr. Billy Pugh or myself at (615) 532-0554.

Sincerely,

Jackie L. Waynick, Manager  
Technical Services Program

JLW:rb:gc

CC: Letters only to the following:  
Darren Palmer, EPA Region IV  
Virginia Ambrose, EPA RTP  
Danny France, EPA Region IV  
Bob Colby, Chattanooga APC  
Rob Raney, Nashville APC  
Lynne Liddington, Knoxville APC  
Bob Rodgers, Memphis APC  
Ron Culberson, Central Office APC  
Billy Pugh, Central Office APC



STATE OF TENNESSEE  
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
Division of Air Pollution Control  
9<sup>th</sup> Floor, L & C Annex, 401 Church Street  
Nashville, Tennessee 37243-1531  
Telephone: (615) 532-0554

June 23, 2006

Certified Mail # 7002 2410 0005 2409 1397  
Return Receipt Requested

Mr. David Lutz  
109 TW Alexander Drive  
MD C304-06  
U.S. EPA  
Research Triangle Park, NC 27711

Dear Mr. Lutz:

The State of Tennessee and its four local air pollution control agencies have completed entry of their 2005 ambient air quality data into the Air Quality Subsystem (AQS).

The purpose of this letter is to certify to the EPA that this data is true and accurate to the best of our knowledge and meets minimum reporting requirements. The AMP 240 and AMP 450 reports are attached. Electronic copies will follow.

Should you have any questions regarding this data, please feel free to call Mr. Billy Pugh or myself at (615) 532-0554.

Sincerely,

Jackie L. Waynick, Manager  
Technical Services Program

JLW:lb

*Attachments 2*

Cc: Letters only to the following:  
Darren Palmer, EPA Region IV  
Virginia Ambrose, EPA RTP  
Danny France, EPA Region IV  
Bob Colby, Chattanooga APC  
Rob Raney, Nashville APC  
Lynne Liddington Knoxville APC  
Bob Rogers, Memphis APC  
Ron Culberson, Central Office APC  
~~Mr. Billy Pugh, Central Office APC~~



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF AIR POLLUTION CONTROL  
9TH FLOOR, L & C ANNEX  
401 CHURCH STREET  
NASHVILLE, TN 37243-1531

December 5, 2007

CERTIFIED MAIL: 7007 0220 0000 1425 2802  
RETURN RECEIPT REQUESTED

Mr. David Lutz  
U.S. Environmental Protection Agency  
109 TW Alexander Drive  
MD C304-06  
RTP, NC 27711

Dear Mr. Lutz:

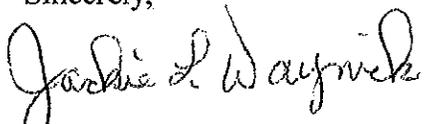
This letter is to advise you the State of Tennessee has completed entry of a portion of its ambient ozone data for the 2007 monitoring season into AQS. Ozone data for reporting organizations 1025, 0581, 0682, 0673, and 0170 have been evaluated according to EPA criteria and is complete and accurate to the best of this agency's knowledge. Copies of the AMP 255 Excel Summary Reports and AMP 450 Report are enclosed with this letter and have been forwarded to you electronically. Please proceed with placing the proper certification flag on this data in AQS.

We have flagged a number of days we believe ozone was affected by exceptional events in 2007. Our initial request to confirm the exceptional events was sent to Region 4's Doug Neeley on August 3, 2007. A final package is being prepared at this time for submittal.

David Lutz  
December 5, 2007  
Page 2

If you have any questions regarding this matter or need additional information, please contact Mr. Billy Pugh at (615) 532-0528. Thank you for your assistance.

Sincerely,



Jackie L. Waynick, Manager  
Technical Services Program

JLW/jct

Enclosure

cc: Darren Palmer, EPA Region 4  
Danny France, EPA Region 4  
Lynne Liddington, Knoxville APC  
Bob Rogers, Memphis APC  
Robert H. Colby, Chattanooga APC  
Rob Raney, Nashville APC

## **TENNESSEE'S EARLY ACTION COMPACT AREAS SUMMARY**

This document represents Tennessee's final Early Action Compact (EAC) submittal in accordance with the EAC protocol. The regulatory State Implementation Plan (SIP) was required for the December 31, 2004 EAC milestone, and demonstrated the early attainment of the 8-hour ozone standard. Consistent with the tenets of the Early Action Compacts on file with the United States Environmental Protection Agency, the Tennessee State Implementation Plan has been amended by the Air Pollution Control Board to incorporate the air quality analysis technical documentation and quantification of control measures being implemented in the Early Action Compact areas in Middle Tennessee, Chattanooga and the Tri-Cities area of the state. The SIP was submitted to EPA December 29, 2004.

This SIP submittal included the addendum to the modeling that was provided in the November 2nd public hearing package and demonstrated that all three EAC areas in Tennessee would attain the 8-hour ozone standard by December 31, 2007. With this final EAC submittal, the state has certified that the 2005 through 2007 ozone data has been quality assured, shows attainment, and all of the EAC areas have been successful in attaining the 8-hour ozone NAAQS standard prior to December 31, 2007.

The Local Portion for each EAC area shows that control measures have been maintained through December 2007. Each EAC area has provided a detailed Final Progress Report showing their commitment to clean air and achieving the 8-hour ozone standard.

Enforceable state control measures implemented in Chapter 1200-3-29 Light-Duty Motor Vehicle Inspection and Maintenance, Chapter 1200-3-36 Motor Vehicle Tampering, and Chapter 1200-3-18-.22 and .24 for Stage I Gasoline Vapor Recovery were provided in the December 2004 SIP submittal.

### **CERTIFICATION OF OZONE DATA 2005 - 2007**

The August 21, 2007 letters sent to each EAC area in Tennessee (Chattanooga, Nashville and Tri-Cities) included instructions from EPA on the final written documentation required to be submitted by each EAC area in order to achieve the next required milestone for the EAC areas. Each EAC area was asked to supply a letter "certifying that the 2007 8-hour ozone ambient air monitoring data for each EAC area has been quality assured and entered into the Air Quality System (AQS) by December 31, 2007." Additionally EPA has requested "a second letter" "that the State has certified that the 2005 through 2007 ozone season monitoring data for each EAC area has been quality assured and shows attainment with the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS). The second letter is also due by December 31, 2007." In order to comply with this request, the following dates are provided that document the certification and completion of the entry of the quality assured

data by Tennessee into AQS for the ozone monitoring sites located in the EAC areas of the state.

<b>Calendar Monitoring Year</b>	<b>Date of Certification Letter to EPA</b>
2005	June 23, 2006
2006	June 27, 2007
2007	December 5, 2007

The date of submittal of the letter for the 2007 ozone monitoring season reflects compliance with the requested December 31, 2007 due date. The 2005 and 2006 letter submittal dates also reflect compliance with the December 31, 2007 requested due date. Copies of the specified letters are also included for reference in an electronic file: (Tennessee Data Certifications 2005 2006 2007.pdf).

The discussion of progress in implementation of all applicable control measures by each EAC is provided in the December 21, 2007 milestone report. The following table confirms that the EAC areas in Tennessee demonstrate “attainment with the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS)” based on the 2005 through 2007 certified and quality assured ozone monitor data.

<b>EAC Areas</b>	<b>County</b>	<b>Site Name</b>	<b>MONITOR ID</b>	<b>2007 4th Max.</b>	<b>Final 2005 2007 DV</b>
<b>Chattanooga EAC Area</b>	Hamilton Co	6200 Bonny Oaks Drive, Eastside Filter Plant	470654003 - 1	0.089	0.084
	Hamilton Co	Soddy Daisy H.S., 620 Sequoyah RD.	470651011 - 1	0.085	0.083
	Meigs Co	8401 Highway 60	471210104 - 1	0.083	0.081
<b>Nashville EAC Area</b>	Davidson Co	1015 Trinity Lane	470370011 - 1	0.076	0.072
	Davidson Co	Percy Priest	470370026 - 1	0.08	0.079
	Rutherford Co	Eagleville Puckett'S Farm	471490101 - 1	0.089	0.08
	Sumner Co	Rockland Recreation Area-Old Hickory Dam	471650007 - 1	0.083	0.084
	Sumner Co	Cottontown Wright's Farm	471650101 - 1	0.085	0.082
	Williamson Co	Fairview Middle School Crow Cut Road	471870106 - 1	0.085	0.077
<b>Tri-Cities EAC Area</b>	Wilson Co	Cedars Of Lebanon State Park	471890103 - 1	0.085	0.082
	Sullivan Co	Hill Road	471632002 - 1	0.09	0.083
	Sullivan Co	Ketron Middle School On Bloomingdale Rd.	471632003 - 1	0.085	0.083

Data as of 12/10/2007 (2007)

With this final EAC submittal, it is the state’s belief that the necessary documentation showing that all EAC areas in the State of Tennessee have successfully achieved attainment of the 8-hour ozone standard as shown by monitoring data for 2005 through 2007.

**FINAL PROGRESS REPORT  
FOR THE  
CHATTANOOGA AREA EARLY ACTION COMPACT  
Dec 19, 2007**

Submitted by the Chattanooga-Hamilton County  
Air Pollution Control Bureau  
December 19, 2007

**PROGRESS REPORT ON 8-HOUR OZONE EARLY ACTION COMPACT FOR THE CHATTANOOGA, TENNESSEE AREA – DECEMBER 19, 2007**

The Local Plan for the Chattanooga Area Early Action Compact (EAC) continues to be implemented. The plan contains three regulatory measures and one voluntary measure for Hamilton County, Tennessee, which SIP credit was claimed for: (1) the Seasonal Burning Ban, (2) Stage 1 Vapor Recovery, (3) the Automobile and Light Truck Inspection and Maintenance Program and (4) the Air Quality Alert Program (Pollution Solution).

Marion and Meigs Counties in Tennessee each have one regulatory and one voluntary program: (1) Stage 1 Vapor Recovery and (2) the Air Quality Alert Program (Pollution Solution).

Walker and Catoosa Counties in Georgia each have two regulatory measures and one voluntary measure: (1) Seasonal Burning Ban, (2) Stage 1 Vapor Recovery and (3) Air Quality Alert Program (Pollution Solution).

Table 1 shows the breakdown of these measures on a county-by-county basis.

**Table 1.** Chattanooga Area EAC Measures Implemented

<b>County</b>	<b>Measure</b>	<b>Regulatory/Voluntary</b>	<b>Effective Date</b>
Hamilton	Seasonal Burning Ban	Regulatory	May 1, 2005
Hamilton	Stage 1 Vapor Recovery	Regulatory	March 15, 2004
Hamilton	Inspection and Maintenance	Regulatory	April 1, 2005
Hamilton	Air Quality Alert Program – Pollution Solution	Voluntary	May 1, 2004
Marion	Air Quality Alert Program – Pollution Solution	Voluntary	May 1, 2005
Marion	Stage 1 Vapor Recovery	Regulatory	May 1, 2006
Meigs	Air Quality Alert Program – Pollution Solution	Voluntary	May 1, 2005
Meigs	Stage 1 Vapor Recovery	Regulatory	May 1, 2006
Catoosa	Seasonal Burning Ban	Regulatory	May 1, 2005
Catoosa	Stage 1 Vapor Recovery	Regulatory	May 1, 2006
Catoosa	Air Quality Alert Program – Pollution Solution	Voluntary	May 1, 2005
Walker	Seasonal Burning Ban	Regulatory	May 1, 2005
Walker	Stage 1 Vapor Recovery	Regulatory	May 1, 2006
Walker	Air Quality Alert Program – Pollution Solution	Voluntary	May 1, 2005

In Hamilton County all four SIP credit measures have been implemented. In addition, 12 voluntary measures, for which SIP credit was not claimed, were included in the local plan and implementation of these voluntary measures is ongoing.

These additional voluntary measures are as follows:

- Public Transit – Increased Ridership
- Intelligent Transportation System
- HELP – Motorist Assist Trucks
- Diesel Retrofits
- Truck Speed Limit Reduction
- Bike Trails and Bike Racks at Work Sites
- Pedestrian Greenways
- Safe Routes to School
- Accelerated Replacement of On-Road Vehicles
- Bio-diesel and Alternative-Fuel Vehicles
- Ultra-Low-Sulfur Fuel in City and County Fleets, and school buses
- Accelerated Replacement of On-and Off-Road Diesel Vehicles

## **Public Participation**

### Stakeholder Meetings

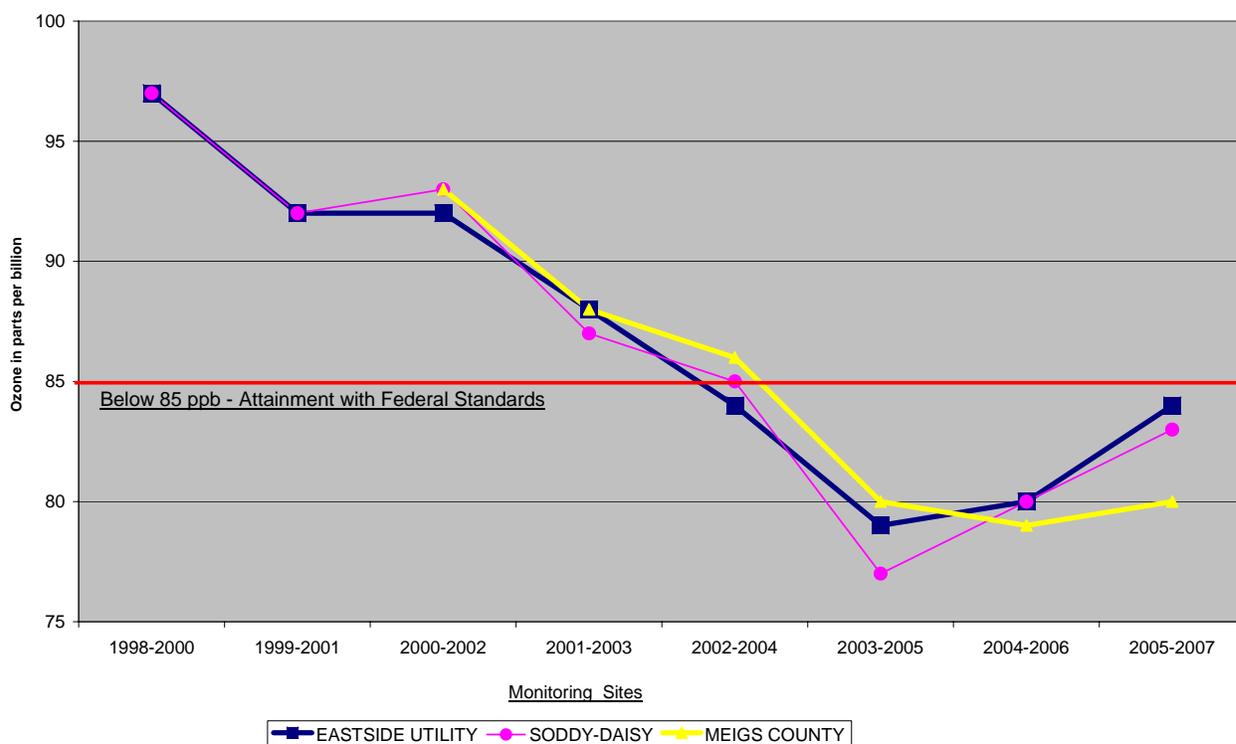
The major stakeholder meetings for the Chattanooga Area EAC were held in 2004; however, the Georgia Department of Natural Resources, Environmental Protection Division held a series of Open Houses/Q&A Sessions for the State Implementation Plan throughout their state. The stakeholders' involvement is currently through the public Transportation Planning Organization (TPO).

The Bureau continues to meet with interested groups to discuss the programs associated with the Early Action Compact and makes appearances with the local media (newspaper, television, and radio) to keep citizens informed and respond to questions and concerns on the progress being made toward the goals of the Early Action Compact.

### **Updates or Revisions to Modeling, Technical Analyses or Planning Activities**

There have been no updates or revisions to modeling, technical analyses or planning activities. The Chattanooga Area Early Action Compact area ozone design value for 2005-2007 at the Eastside Utility monitor is 84 ppb and is 83 ppb at the Soddy Daisy Monitor (see figure below). The Meigs County ozone design value is 80 ppb.

**8-HOUR OZONE DESIGN VALUES FOR CHATTANOOGA AREA - 2000-2007**  
 (3-year average of 4th high values at each monitor)



All regulatory measures have been adopted and implemented in Hamilton, Catoosa, and Walker Counties. Information follows on each of the three regulatory measures, along with information on the voluntary measures.

**Regulatory Measures**

Seasonal Burning Ban

This control measure was described in full, along with the expected reduction in emissions, in the “Local Plan for the Chattanooga Area Early Action Compact” dated December 21, 2004, and submitted by the State of Tennessee as part of the “Regulatory State Implementation Plan (SIP) Submittal for Tennessee’s Early Action Compact (EAC) Areas” dated December 29, 2004.

The seasonal burning ban was adopted by Hamilton County on October 4, 2004 and went into effect May 1, 2005. Since that date, no burning was allowed in Hamilton County between May 1 and September 30 of each year. This program has been very successful as measured by the number of complaints received.

The Bureau undertook a public awareness program in April 2006 and October 2006 disseminating information through media outlets, including 6 TV stations, 21 radio stations and 4 print publications. The information was also sent to local municipalities (including fire halls and police departments) and businesses through various mailing lists, including the Chamber of Commerce and the Chattanooga Manufacturers Association.

In April 2007 and September 2007 the Bureau undertook a second public awareness program to inform the public of the beginning and end of the 2007 ban. The same methods were employed as above.

Information pertaining to the ban was provided on the Bureau’s website ([www.pollutionsolution.org](http://www.pollutionsolution.org)) and through the Bureau’s telephonic information line (423-643-5971). Additionally, the Bureau distributed a brochure about the burning ban. It was also published on the Bureau’s website, where it can be accessed at [http://www.pollutionsolution.org/Open\\_Burning/burning\\_ban\\_brochure.pdf](http://www.pollutionsolution.org/Open_Burning/burning_ban_brochure.pdf).

During the 2007 burning ban, the Bureau responded to a total of 42 burning complaints. Of those burning complaints, 36 were confirmed violations. Statistics on the burning ban seasons are listed below.

Burning Ban Season (May 1 – September 30)	# of Burning Complaints	# of Confirmed Violations
2004	156	126
2005	88	66
2006	59	50
2007	42	36

Overall, Hamilton County residents are reducing burning during the seasonal burning ban. The number of complaints decreased 73% from May 2004 and October 2007.

In Walker and Catoosa Counties in Georgia, ozone season burning restrictions went into effect on May 1, 2005 and continued through September 30, 2005. This was enforced again from May through September 2006 and May 1, 2007 through September 2007, and will continue to be enforced.

Stage 1 Vapor Recovery

This control measure was described in full, along with the expected reduction in emissions, in the “Local Plan for the Chattanooga Area Early Action Compact” dated December 21, 2004, and submitted by the State of Tennessee as part of the “Regulatory State Implementation Plan (SIP) Submittal for Tennessee’s Early Action Compact (EAC) Areas” dated December 29, 2004.

Stage 1 Vapor Recovery was adopted by Hamilton County on March 15, 2004. Since that date all gasoline dispensing facilities subject to the rule have been issued air pollution control permits. There are 180 facilities subject to the rule and inspections of those facilities are conducted annually.

Permitting forms continue to be available on the Bureau’s website, [www.pollutionsolution.org](http://www.pollutionsolution.org).

Gasoline dispensing facilities in Meigs County and Marion County were subject to Stage 1 Vapor Recovery beginning May 1, 2006 and the State of Tennessee has implemented this effort in both counties. Marion County is not part of the Early Action Compact area but is adjacent to Hamilton County, so was included in the program. The State of Tennessee sent an information package which included permitting forms to gasoline dispensing facilities in Meigs and Marion Counties. There were 15 gas stations in Marion County and 7 in Meigs County that have been identified for permitting.

Stage 1 Vapor Recovery was required beginning May 1, 2006, for gasoline dispensing facilities in Walker and Catoosa counties in Georgia. There were 111 facilities in the counties, combined, that are subject to the Stage 1 Vapor Recovery.

### Automobile and Light Truck Inspection and Maintenance

This control measure was described in full, along with the expected reduction in emissions, in the “Local Plan for the Chattanooga Area Early Action Compact” dated December 21, 2004, and submitted by the State of Tennessee as part of the “Regulatory State Implementation Plan (SIP) Submittal for Tennessee’s Early Action Compact (EAC) Areas” dated December 29, 2004.

State vehicle emissions testing began in Hamilton County on April 1, 2005. All passenger cars and light trucks subject to the requirements must pass the emissions test prior to registration in Hamilton County.

The Bureau partnered with the State and members of Envirotest, the contractor in charge of the testing facilities, in a series of outreach events to educate the public about emissions testing. To aid in the outreach, the State created a fact sheet and a flyer describing the program.

Two Public Service Announcements were recorded for radio and sent to 21 radio stations. They ran at the stations’ discretion beginning March 18, 2005. The flyer also goes out with each resident’s tag renewal notice.

Currently information is available through Hamilton County’s website at [www.countyclerkanytime.com](http://www.countyclerkanytime.com), the Bureau’s website at [www.pollutionsolution.org](http://www.pollutionsolution.org) and the State’s website at [www.state.tn.us/environment/apc/vehicle](http://www.state.tn.us/environment/apc/vehicle). Fact sheets and flyers are also distributed upon request by the State and the Bureau.

In March 2006, the first cycle of automobile and light truck inspections in Hamilton County was completed. As of November 30<sup>th</sup>, 236,628 vehicles were inspected initially in 2007, with 19,856 (or 7.45%) failing. Vehicles will continue to be required to be inspected annually.

## **Voluntary Measures**

### Air Quality Alert Program

This control measure was described in full, along with the expected reduction in emissions, in the “Local Plan for the Chattanooga Area Early Action Compact” dated December 21, 2004, and submitted by the State of Tennessee as part of the “Non-Regulatory State Implementation Plan (SIP) Submittal for Tennessee’s Early Action Compact (EAC) Areas” dated December 29, 2004.

The air quality alert program, called *Pollution Solution*, is activated when the Air Quality Index (AQI) for ozone is predicted to be greater than 100. On air quality alert days, information is sent via email and fax to more than 80 individuals; city, county and State employees in all of the EAC counties; daycares; gyms; hospitals and health care facilities; schools; police and fire departments and also through media outlets, including 6 TV stations, 21 radio stations and 4 print publications.

Information is also disseminated to employers, who then pass the information to their employees, via the Chamber of Commerce and the Chattanooga Manufacturers Association.

Information pertaining to Pollution Solution is also provided on the Bureau's website ([www.pollutionsolution.org](http://www.pollutionsolution.org)) and through the Bureau's telephonic information line (423-643-5971). The local daily newspaper prominently displays the alerts and television stations have been giving increasing coverage of these events.

During the 2006 Ozone Season, twelve days were predicted to reach an Air Quality level greater than 100. On those days, a *Code Orange* alert was put into effect. Ozone concentrations actually reached the USG level on seven of those days. There were no *Code Red* alerts for the 2006 Ozone season.

For PM<sub>2.5</sub> a *Code Orange* alert was put into effect six times during 2006 with two of those days reaching the *Code Orange - Unhealthy for Sensitive Groups* range. There was one unpredicted day reaching the AQI level of 100 or more. There were no *Code Red - Unhealthy* alerts for PM<sub>2.5</sub>.

In the 2007 Ozone Season, 16 days were predicted to reach an Air Quality level greater than 100. On those days, a *Code Orange* alert was put into effect. Ozone concentrations have actually reached the USG level on five of the predicted days and once that was not predicted. There were no *Code Red* alerts for the 2007 Ozone season.

Thus far in 2007, a *Code Orange Alert* for PM<sub>2.5</sub> was put into effect 11 times during the 2007 with two of the predicted days reaching USG levels. However, there were seven days when air quality levels reached USG that were not predicted.

In addition to alerting the public when levels were predicted to be USG, the Bureau expanded its public outreach program for the 2007 ozone season by purchasing billboard and television advertising. Five (5) billboards were located throughout Hamilton County and reached a minimum of 217,000 people over a three month period.



The television advertising was conducted in partnership with the local CBS affiliate - WDEF. Over 1,000 spots aired during the ozone season. The television campaign reached approximately 366,000 people an average of 15 times each. A webpage was included on the WDEF website ([www.wdef.com](http://www.wdef.com)) dedicated to educating its audience about air pollution and giving them a chance to

win one of four bicycles from Suck Creek Cycles. Included on the webpage was an advertising banner that linked to the Bureau's web page.



### Survey to Demonstrate the Benefit of the Ozone Action Day Program

The Pollution Solution program is a voluntary program that was included for EAC credit in the State Implementation Plan (SIP) dated December 29, 2004. In order to gain credit, the Bureau is required to quantify the reductions gained by the program. The SIP credit given by EPA for the voluntary mobile source emission reduction program (VMEP) was 0.13 tons of oxides of nitrogen (260 lbs) per day.

The preferred method for quantifying the benefit of the program was a public survey, as defined in the "Quantification Method Reference Manual: A Method to Measure Travel and Emissions Impacts of Ozone action Public Education Programs" (April 30, 2003, by ESTC for the California Air Resources Board, U.S. Environmental Protection Agency and the Federal Highway Administration.)

In November 2005, the Bureau contracted with the Center for Applied Social Research at the University of Tennessee at Chattanooga to conduct a survey of Hamilton County residents. The survey was created by the government partnership, *It All Adds Up to Cleaner Air*, to gather market data specifically focusing on air and the environment. Before committing to this survey, the Bureau consulted with *It All Adds Up*, Mark Coryell of the EPA National Vehicle and Fuel Emissions Laboratory and with Eric Schreffler, Transportation Consultant, of ESTC, as recommended by EPA Region 4.

The Chattanooga-Hamilton County Air Pollution Control Board contracted with True North Research, Inc. to conduct a series of episodic phone surveys (surveys taken after ozone action days) during the 2006 Ozone Season. This was designed to determine how peoples' behavior changed as a result of the Ozone Action Day. A total of 500 randomly selected adults in Hamilton County participated on the evening of one of the five Ozone Action Days. These surveys were conducted in May, July, and August and lasted an average of 15 minutes. The survey concluded that 4,812 trips were reduced daily as a result of the Ozone Action Days, totaling 26,499 miles per day. True North used a reducer of 50% to compensate for respondents who might inflate their responses. Overall 2.04% of respondents indicated they had reduced driving as a result of the Ozone Action Day. The daily oxides of Nitrogen reductions were 0.026 tons (52 lbs) per day, or 20% of our target. In order to achieve 0.13 tons per day 24,060 people in Hamilton County will need to change their driving habits on Ozone Action Days.

The Board exercised its option with True North to continue to conduct a series of episodic phone surveys during the 2007 ozone season. True North's episodic phone surveys began on action days later in the season after the billboard and TV spots began. They provided an evaluation report at the end of the ozone season. As in 2006, 500 randomly selected adults in Hamilton County participated in one of the five surveys. The survey concluded that 2% of respondents indicated they had reduced driving as a result of the Ozone Action Day. This resulted in an estimated reduction of 4,064 trips and 77,948 vehicle miles traveled (VMT) per ozone action day. Overall, the 2007 Ozone Action Day program reduced an estimated 0.077 tons of nitrogen oxides (NOx) per ozone action day.

### **Other Voluntary Control Measures**

These voluntary measures were described in full, along with the expected reduction in emissions, in the "Local Plan for the Chattanooga Area Early Action Compact" dated December 21, 2004, and submitted by the State of Tennessee as part of the "Non-Regulatory State Implementation Plan (SIP) Submittal for Tennessee's Early Action Compact (EAC) Areas" dated December 29, 2004.

These voluntary measures were not modeled or included in the SIP, yet they continue to contribute to the effort to improve air quality. Specific notable accomplishments that contribute to air quality improvement include:

#### Municipal Buses – Increased Ridership For CARTA's Fixed Route Service

The public use of fixed route municipal buses continues to increase. CARTA's fixed route service increased 7% from 2005-2006, from 1,578,999 to 1,684,722. Increases in these figures are attributable to higher fuel prices and increased public awareness.

The downtown shuttle route uses electric and hybrid-electric buses. Since the shuttle began its service in 1992, CARTA estimates an excess of more than 2,002,768 pounds of emissions have been eliminated as a result. In FY 2005, ridership for the year totaled 1,006,489. Ridership for FY 2006 showed an 11% reduction to 897,328. Lower ridership is attributable to service reductions and decreased tourism in the downtown area.

CARTA's overall ridership decreased as a result of service reductions and decreased tourism in FY 2006, from 3,223,309 in FY 2005 to 3,171,623 in FY 2006. The overall ridership from January through October of FY 2007 is 1,001,539. The continued decrease is the result of service reductions and decreased tourism, as in FY 2006.

#### Intelligent Transportation System

The Tennessee Department of Transportation began the installation of Hamilton County's SmartWay Intelligent Transportation System in 2005. Phase 1 of the project is installation of 66 freeway cameras. These cameras are used to monitor traffic congestion, and improve incident management and to dispatch the HELP trucks. The public can now view current traffic conditions by accessing the cameras on-line at the Tennessee Department of Transportation's SmartWay web site at <http://ww2.tdot.state.tn.us/tsw/asp/smartmap.asp>.

This camera-dispatcher system will be used until mid-2009, which is when TDOT estimates the rest of the SmartWay system, including Phases 2 and 3, will come online. Between now and 2008 TDOT will be building a larger complex to house the equipment necessary to run the entire system.

Phase 2 of the project comprises the installation of 20-25 dynamic message signs, which will be installed on the freeways. These will reroute motorists away from congested areas. They will also be used to announce air quality alerts if TDOT agrees to this.

Phase 3 will include the installation of a traffic detection system, which senses the average speed of traffic and alerts dispatchers if there is a slow-down. Additionally a low-band AM radio station with traffic information will be put into service.

### HELP – Motorist Assist Trucks

TDOT’s HELP trucks patrol the most heavily traveled freeways in Chattanooga, Knoxville, Memphis and Nashville seven days a week. The HELP Program emphasizes quick clearance of congestion-causing accidents and breakdowns on the highways. This is part of the TDOT Smart Way plan to address traffic congestion issues.

HELP has been operating in Chattanooga since June 2000. According to TDOT’s website, 610,555 motorists have been assisted by this program since it began. Following is a table describing the type of service provided by HELP to motorists in Chattanooga. For comparison, in Table 2, the other major cities are listed as well.

**Table 2.** Types of Services Provided by HELP

<u>Type of service</u>	<u>Knoxville</u>	<u>Nashville</u>	<u>Chattanooga</u>	<u>Memphis</u>
Provided traffic control	27,998	76,415	61,782	21,287
Tagged abandon vehicles	17,540	28,719	12,462	42,450
Changed tires	13,347	27,196	9,988	33,732
Provided fuel	11,395	16,149	8,600	22,135
Relocated from travel lanes	5,192	16,423	9,358	7,858
Debris removal from lanes	13,436	10,769	10,569	11,303
Provided first aid	771	668	1,016	1,231

[www.tdot.state.tn.us](http://www.tdot.state.tn.us) – 12/14/07

### Diesel Retrofits

The Chattanooga-Hamilton County Air Pollution Control Bureau and First Student, Inc., a provider of student transportation, announced the successful completion of the Clean School Bus project on September 29, 2005. The Air Pollution Control Bureau received a grant from the U.S. EPA which allowed them to “clean up” 105 school buses resulting in a significant reduction in pollution. This is more than half of the school buses in Chattanooga and Hamilton County. The diesel retrofit project improved local air quality and reduced children's exposure to diesel exhaust.

In May 2007, the Hamilton County School Board selected Durham School Services to replace First Student, Inc. The School Board required in its proposal that all new school buses be provided. This caused Durham to use 185 new school buses which operate on ultra-low sulfur diesel fuel and are subject to the 2007 NO<sub>x</sub> standard which calls for a 98% reduction in NO<sub>x</sub>.

#### Truck Speed Limit Reduction

In March 2005, the Tennessee Department of Transportation (TDOT) reduced the speed limit for heavy-duty diesel trucks from 65 mph to 55 mph on all limited access highways in Hamilton County, including parts of Interstate 24, Interstate 75, U.S. Highways 27 and 111. This measure was implemented as an emissions reduction measure although not specified in the "Local Plan" dated December 21, 2004. It is anticipated to result in a reduction 0.7 tons of NO<sub>x</sub>/day, or 256 tons per year.

The measure was requested by the Hamilton County Mayor and the Chattanooga City Mayor for the purpose of improving air quality. This resulted in Hamilton County being the first area in the State of Tennessee to implement this specific emission reduction strategy.

This measure is a voluntary measure which was not included in the Early Action Compact, but which was implemented to help meet our emissions reductions target. This measure more than makes up for any deficiencies in the Air Quality Alert Program emissions reductions.

#### Bike Trails

Chattanooga was designated again as one of the five best Cycling Cities in its size class in the United States by Bicycling Magazine in 2006. The Chattanooga area has a Bicycle Task Force (BTF) that meets monthly and the chairperson serves on the Executive Staff of the Transportation Planning Organization. The BTF hosted Bike2Work 2006 with support from the community, including key sponsorship by Blue Cross/Blue Shield of Tennessee. Bike2Work was held on the first Friday of every month from May until October. Bike2Work 2007 began May 4<sup>th</sup> and continued through October 5, 2007. Attendance has routinely included participation from the Chattanooga City Council, as well as the Administrator for Parks & Recreation and the Executive Director of Outdoor Chattanooga.

In April 2007, Chattanooga and Hamilton County were recognized for implementing a regional bicycle effort. The American Planning Association (APA) selected Chattanooga and Hamilton County as recipient of APA's 2007 National Planning Excellence Award for Implementation of its Bicycle Facilities Master Plan.

In addition to Bike2Work, bicycle training courses are offered and a *Bike to Riverbend* night was held. Riverbend is a summer music festival held downtown at Ross's Landing (on the riverfront). Bike Chattanooga's *Bike to Riverbend* program won a Silver Pinnacle Award for Environmental Achievement, one of eight awards that the Riverbend Festival won from the International Festivals and Events Association (IFEA) for 2007. In only its second year at the nine-day event, Bike to Riverbend has provided free, secure valet parking for over 600 festival-goers, and a fun and environmentally-friendly way to enjoy Riverbend.

In partnership with the Chattanooga Bicycle Club, Urban Bicycle Tours are held each week which highlight the bicycle facilities and community.

Additional events were held during Bicycle Friendly Week in October. They included:

- Riverwalk Bicycle Day – This event equipped bicyclists with free bicycle bells, safety and etiquette information, and a free maintenance check.
- Bicycle Friendly Community Award – The presentation celebrated Chattanooga’s designation as a Bicycle Friendly Community by the League of American Bicyclists through 2007. It was attended by the Mayor, a member of the City Council, the Parks & Recreation Administrator and other government and citizen representatives. This award was renewed in November 2007.
- Undercover Chattanooga: A Scavenger Hunt – This event was hosted by the Chattanooga Bicycle Club and allows participants to explore the public architecture and sculpture around the city.
- Street Smarts – Cycling 101 Course: This is a short course designed for beginning cyclists to feel comfortable riding in traffic.

The Tennessee Riverwalk was completed between downtown Chattanooga and the Chickamauga Dam in April 2005. This shared-use facility serves as an important recreational and transportation facility for bicyclists and pedestrians. It is used as a primary feeder route as part of the area’s Bike2Work activities. The Mayor and other dignitaries completed a bicycle ride of the entire facility as part of a grand opening celebration. Pedestrian and bicycle-“find your way” signs have been installed.

The Chattanooga Urban Area Bicycle Facilities Master Plan, presented on April 2002 at a public meeting, builds upon the 140 miles of existing and previously planned greenways within the planning area. The plan identifies 382 miles of additional facilities that are comprised of the following:

- 40 miles of Class I - Multi-use Paths
- 154 miles of Class II- Bike Lanes (separated lane 4-6 ft. wide immediately adjacent to vehicular travel lane)
- 188 miles of Class III - Bike Routes (a wide outside lane to accommodate both vehicles and bicycles).

The planning horizon for this plan is 20 years. The plan addresses engineering, education, encouragement, and enforcement. These aspects of bike plans, often referred to as the "Four E’s," are essential to the successful implementation of the plan.

The final segments of Phase I of the area’s Bicycle Plan were delayed in 2005 due to many of the street conversions being completed in the downtown area. However, 8 additional miles of bike paths were added through the Riverwalk and one additional mile of bike lane was added to portions of East 3<sup>rd</sup> Street.

### Bike Racks at Work Sites

The City has installed bike racks along the Market Street corridor and libraries and recreation centers. Additional bike racks were installed in 2006. Major employers such as Unum, TVA and Blue Cross have bicycle parking installed at their facilities.

All mainline buses from the Chattanooga Area Regional Transportation Authority (CARTA) are equipped with bicycle racks. The Bicycle Task Force has a demonstration unit which is used to promote usage of bicycle racks on buses. As a result of the outreach effort, the number of bicycles transported on buses has increased since they were installed as shown in the table below.

<b><u>Number of Bikes Transported by CARTA on bicycle racks</u></b>	
<u>Year</u>	<u>Number</u>
2003	936
2004	2,656
2005	2,788
2006	3,186
2007	3,742

Also, tunnel lights have been added to two of the tunnels in Chattanooga that have a high volume of bicycle traffic. When a cyclist approaches the tunnel, they can press a button to activate the lights, alerting motorists to their presence in the tunnel.

#### Pedestrian Greenways

The Chattanooga area has an extensive network of pedestrian greenways. In fact, they were named by Runner's World Magazine as "One of the coolest (as in great) places to run and walk!" In 2005 the Tennessee Riverpark added 8 miles to its greenway and the new, mile-long University Greenway opened. This greenway provides a pedestrian pathway to the University of Tennessee at Chattanooga campus. There are now 28.5 miles of greenways in Chattanooga, up from 12 miles in 2004.

Funding in the amount of \$1.78M has been earmarked for the extension of the South Chickamauga Creek Greenway. This will add approximately seven miles to the pedestrian greenway system in Hamilton County.

Funding has been approved for a 3.5 mile portion of greenway that will run from South Chickamauga Creek to the Harrison Pike area. Chattanooga should break ground in the summer of 2008.

#### Safe Routes to School

The *Safe Routes to School* program identifies safe walking and bicycling routes for elementary and middle school students to be able to walk or bike to school. This is an annual program encouraging students to walk or ride their bikes instead of taking the bus or car. It is an effort to teach children early on that it is good for health and the air quality.

The schools were ranked by safety conditions and those with the most dangerous walking and biking situations were contacted first. To kick off the program for each participating school, a school-wide "Walk to School" event was held where everyone met at a safe location near the school and walked to the school together. A grant was awarded in 2007 for \$334,000. The improvements funded will include sidewalks, crosswalks, bike racks, and traffic controls.

### Accelerated Replacement of On-Road Vehicles

The Bureau has 3 hybrid-electric automobiles in its fleet. The City of Chattanooga has purchased 11 hybrid-electric automobiles and 212 flex-fuel Ford vehicles that are capable of running on the E-85 ethanol blends. All new Fords purchased by the City this year are flex-fuel vehicles, thus increasing the number of flex-fuel vehicles day by day. Chattanooga has seven (7) 2007 garbage trucks with the new diesel air pollution controls to replace older vehicles and have ordered three (3) more. Also, the City received grant approval for the installation of E-85 infrastructure and it is currently out for bid.

### Bio-diesel and Alternative Fuel Vehicles

In December 2004 bio-diesel entered the Chattanooga retail market through the Midnite Oil station on Bonny Oaks Drive and Benton Oil Company.

Use of bio-diesel in East Tennessee continues to grow. No bio-diesel was used in East Tennessee in 2003. Starting in 2004 approximate bio-diesel use is as follows:

2004 approximately 90,000 gallons of B100  
2005 approximately 750,000-800,000 gallons of B100  
2006 goal of 1,000,000 gallons of B100

With the prices of bio-diesel and diesel fluctuating, bio-diesel consumption consistently depends on its price. Other local fleet users include the City of Chattanooga (20% bio-diesel in all diesel applications), Hamilton County (30% bio-diesel in all applications), Benton Oil Company, and Chattanooga Area Regional Transportation Authority (CARTA). Several fleets regularly purchase a bio-diesel blend depending on the current price of fuel. In addition, the fuel is available for purchase at a retail station centrally located in the city so a number of vehicles in the Chattanooga area are using a B20 blend in their vehicles.

### Ultra-Low-Sulfur Fuel in City and County Fleets

Ultra-low sulfur diesel fuel is being used by the city and county. In addition to that, all 2007 vehicles need ultra-low sulfur diesel fuel to operate. The City of Chattanooga currently has seven (7) 2007 diesel garbage trucks and ordered three (3) more for delivery soon. The replacement of garbage trucks that date back to the 1990's will result in reductions of 4.67 tons per year of Carbon Monoxide; 17.88 tons per year of NOx and .48 tons per year of volatile organic compounds.

### Accelerated Replacement of On- and Off-Road Diesel Vehicles

Chattanooga Area Regional Transportation Authority (CARTA) has a total of 82 buses in its fleet:

- 54 diesel buses (3 are using 20% bio-diesel)
- 14 Care-A-Vans (1 uses 20% bio-diesel)
- 15 Battery-powered electric buses
- 2 Hybrid-electric buses

CARTA offers an aggressive program for reducing vehicle emissions. In addition to the pilot project they are running on bio-diesel, 49 buses in the mainline fleet have been replaced with new buses with

cleaner technology. As of March 1, 2007 only 5 buses remain in the fleets that were manufactured between 1986 and 1988. CARTA will replace these during the next round of purchasing, though no official date has been set.

### Additional Measures

In addition to the voluntary measures listed above, other initiatives have been undertaken locally.

*Waste Transfer Station* – A private waste transfer station has been constructed in a central location. The City of Chattanooga has contracted with the facility to haul its refuse collected to the sanitary landfill. New, cleaner-burning 2005 Kenworth trucks and two, 2006 roll-off trucks were purchased. The facility also serves private waste haulers.

Each trip delivers the equivalent of five loads of refuse under the previous system. Between December 2004 and 2005, this project eliminated an estimated 543,000 vehicle miles traveled by the older and dirtier garbage trucks.

The City of Chattanooga also consolidated its curb-side recycling program to provide for one pick-up per month rather than four pick-ups per month, thus reducing VMTs from these heavy-duty diesel vehicles.

*Conversion to Two-Way Streets* – Downtown Chattanooga converted several downtown streets from one-way to two-way in 2004. Conversion of two-way streets decreases the number of vehicle miles traveled by allowing drivers to travel a more direct route to their destination. It also makes streets more pedestrian friendly.

*Urban Revitalization* – An emphasis on smart growth has resulted in 811 new housing units being built in or near the central city of the last five years and another 318 units will be built in the future. This greatly reduces the numbers of vehicle miles traveled by making pedestrian and bicycle commutes more practical.

With the holiday rush unfortunately, the change noted below regarding CARTA for the "Municipal Buses" didn't make it into the final EAC submittal. I am forwarding this information along to as a minor update to the Hamilton County portion (page 8) of the EAC Final submittal. Please include the update below as an informational item to the Dec 21st 2007 EAC final submittal. If you have any questions or need additional information, please let me know. Thanks

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TDEC/APC  
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>>> "McCorvie Amber" <mccorvie\_a@mail.chattanooga.gov> 12/21/2007 2:14 PM >>>  
Vicki,

I realized this is a little late, but we discovered earlier that the numbers we were provided from CARTA for the "Municipal Buses" section on page 8 were for the Fiscal Year, instead of calendar year. If it is not too late, could we include this paragraph in place of the one under the same title on page 8 of the EAC report? I didn't know if it was too late, but I thought I would send this over in case it is not. I apologize for the confusion and inconvenience.

#### Municipal Buses - Increased Ridership For CARTA's Fixed Route Service

The public use of fixed route municipal buses continues to increase. CARTA's fixed route service increased 7% from 2005-2006, from 1,578,999 to 1,684,722. Increases in these figures are attributable to higher fuel prices and increased public awareness. Ridership for the first third of the 2007 Fiscal Year (July to June) has increased, with ridership numbers nearing last years total Fiscal Year at 815,808.

The downtown shuttle route uses electric and hybrid-electric buses. Since the shuttle began its service in 1992, CARTA estimates an excess of more than 2,002,768 pounds of emissions have been eliminated as a result. In FY 2005, ridership for the year totaled 1,006,489. Ridership for FY 2006 showed an 11% reduction to 897,328. Shuttle ridership for FY 2007 (July to June) is at 395,785 (July through November 2007).

CARTA's overall ridership decreased as a result of service reductions and decreased tourism in FY 2006, from 3,223,309 in FY 2005 to 3,171,623 in FY 2006. CARTA'S Fiscal Year runs from July through June, and the ridership for FY 2007 is 1,001,539. CARTA's overall ridership from January through November of 2007 is 2,867,788. Overall, this is an increase since last year.

Thank you and Happy Holidays,

Amber

Amber McCorvie

Public Relations Specialist

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