



Catherine E. Heigel, Director

*Promoting and protecting the health of the public and the environment*

April 25, 2016

2015/2016 Path Forward Plan  
c/o Laura Bunte, Mail Code C304-01  
109 TW Alexander Drive  
Research Triangle Park, NC 27711

Re: 2015/2016 Path Forward Plan, Ozone and Particulate Matter Advance Programs

Dear Ms. Bunte:

The South Carolina Department of Health and Environmental Control (Department) wishes to provide the U.S. Environmental Protection Agency (EPA) this “2015/2016 Path Forward Plan” for both the Ozone and the Particulate Matter (PM) Advance Programs as an update and replacement of the 2014 Path Forward Plan. The Department has aggressively worked alongside South Carolina air quality stakeholders in multipollutant programs similar to the Advance Programs since 2001, as described in our plan. By participating in the Ozone and PM Advance Programs, in partnership with the EPA and our stakeholders, we are pledging to continue our successful efforts at reducing emissions of pollutants and improving our air quality in South Carolina.

The Department commits to its participation in the EPA’s Ozone and PM Advance Programs and will continue to work with our air quality coalitions, industries, schools, local governments, and interested individuals on voluntary multipollutant reducing programs. We look forward to your acknowledgement of receipt of this “Path Forward Plan.” If you have any questions please contact Mr. Jack Porter at 803-898-3829 or [porterje@dhec.sc.gov](mailto:porterje@dhec.sc.gov).

Sincerely,

Rhonda Thompson  
Chief, Bureau of Air Quality

cc: Heather McTeer-Toney, Regional Administrator, U.S. EPA Region 4

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**South Carolina Ozone Advance and Particulate  
Matter (PM) Advance Programs  
2015/2016 Path Forward Plan**

Submitted by  
The South Carolina Department of Health and Environmental Control  
Bureau of Air Quality

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# **South Carolina Ozone Advance and Particulate Matter (PM) Advance Programs 2015/2016 Path Forward Plan**

## **A. Introduction**

The United States Environmental Protection Agency (EPA) establishes standards for criteria pollutants that affect ambient air quality. These pollutants (ozone, PM, lead, nitrogen dioxide, sulfur dioxide and carbon monoxide) are known to have adverse health effects if found in certain concentrations. The National Ambient Air Quality Standards (NAAQS) are established to sufficiently protect human health and welfare.

In South Carolina, our citizens are fortunate that they have enjoyed good air quality for years. For over a decade, our air quality has steadily improved. Currently, only two pollutants – ground-level ozone and particulate matter – are at levels in some areas that make them “at-risk” for a nonattainment designation should the EPA tighten standards. The South Carolina Department of Health and Environmental Control (Department) has strived to create and implement initiatives that continuously improve air quality, and the Department intends to continue these efforts through multiple voluntary programs, to include participation in the Ozone and PM Advance Programs.

## **B. The Ozone and PM Advance Programs**

The Ozone and PM Advance Programs are collaborative efforts between the EPA, states, tribes, local governments, businesses and industries. The programs encourage expeditious emission reductions in ozone and PM attainment areas to help participating areas continue to meet the NAAQS for ground-level ozone and PM. By encouraging a proactive approach at the local level, the Advance Programs can help attainment areas ensure that their air remains healthy, and the EPA can assist areas in addressing any ozone and PM issues that arise.

Advance is distinct from the former Early Action Compact (EAC) program in that it focuses on attainment areas, and it does not provide regulatory flexibility in the form of deferred designations. It is similar to the EAC program in that it encourages early actions to reduce pollutant and precursor emissions so that the area can avoid a nonattainment designation.

By participating in the Ozone and PM Advance Programs, in partnership with the EPA and our stakeholders, we are pledging to continue our successful efforts at reducing emissions of pollutants and improving air quality in South Carolina.

## **C. Early Partnership Development and the EACs**

The Department has aggressively worked alongside South Carolina air quality stakeholders in multipollutant programs similar to the Advance Programs for over a decade, as described below.

In the fall of 2002, the EPA approved an Early Action Plan wherein areas meeting the 1-hour ozone standard could have the effective date of a nonattainment designation for the 1997 8-hour ozone standard deferred by achieving emissions reductions sooner than required under the 1997 8-hour ozone implementation rule, as long as agreed upon milestones were met.

Forty-five of forty-six South Carolina counties signed EACs in December 2002. The Department worked with the EPA, state and local governments, industry, environmental groups, and other interested parties to develop strategies to reduce ground-level ozone precursor emissions. In March 2004, counties participating in the EAC program submitted local Early Action Plans to the Department.

On April 15, 2004, the EPA designated two areas of South Carolina nonattainment, with the effective date deferred as a result of EAC participation. The design values from all of the monitors in the deferred areas met the ozone standard in 2005, and continued to meet it from that time forward. A portion of York County was designated nonattainment (moderate level) effective June 15, 2004, due to proximity with Charlotte, North Carolina and was not allowed to participate in the EAC program. Only areas classified as marginal nonattainment were allowed to participate.

The Department organized an Early Action Compact Summit in 2006, in order to provide an opportunity for South Carolina air quality partners to share their successes and solidify their resolve to continue improving air quality beyond the term of the EAC compact. As the first of its kind, it attracted nearly 300 stakeholders from five different states including representatives from 24 counties and seven Councils of Government. Participants included representatives from federal, state, and local governments as well as industry representatives, environmental organizations and private citizens.

The EAC Summit topics included energy conservation, diesel retrofits, land use planning, alternative fuels, commuting options and multi-modal transportation, innovative education and outreach, health impacts/lifestyle and finding the funding. Key speakers included Bill Wehrum, Acting Assistant Administrator for Air & Radiation, U.S. EPA, and Mark MacLeod, the Director for Special Projects in Environmental Defense's Climate and Air program, working out of the Washington, D.C. office. As experience with the EAC process demonstrated, direct involvement of stakeholders is critical to overall success with initiatives for improving air quality. The EAC Summit initiative certainly proved this point again. The exchange of ideas, information and interest experienced during the sessions and other opportunities, including breaks and meals, was very beneficial.

As a service to those not attending the EAC Summit, a website was created where electronic copies of the EAC Summit materials were made available. Information included speaker biographies, presentations, additional information, Department staff, registered attendee contact information, list of vendors and contact information, a list of sponsors, and event photos.

EAC counties provided regular updates on the progress of their air quality initiatives to the Department beginning in December 2003. This information was compiled and submitted to the EPA semi-annually throughout the program, which ended December 31, 2007.

On December 14, 2007, the Department requested that, based on ambient air monitoring data for 2005, 2006, and 2007, the South Carolina areas that had been designated as nonattainment for the 1997 8-hour ozone standard with the effective date deferred be redesignated to attainment. On April 2, 2008, the redesignations were published in the *Federal Register*.

Although the EAC program officially ended with our affected areas redesignated to attainment, the efforts with the stakeholders across our State did not cease. These efforts have allowed the ambient ozone and PM concentrations to continue to drop, keeping our areas ahead of the ever-tightening NAAQS. These EAC participants have evolved into our air quality coalitions, which will be discussed in greater detail in Section G.

## **D. Ozone, PM and Health Concerns**

### **1. Ground-Level Ozone and Health Concerns**

Ground-level ozone is not emitted directly by the combustion of fuels. Ozone is formed in the atmosphere by the reaction of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>) in the presence of sunlight. These air pollutants are often referred to as ozone precursors, and are emitted by many types of pollution sources, including on-road and off-road (nonroad) motor vehicles and engines, power plants and industrial facilities, and smaller sources such as dry cleaners, gas stations and fires. Changing weather patterns contribute to yearly differences in ozone concentrations from region to region. Ozone and the pollutants that form ozone can also be transported into an area from pollution sources hundreds of miles upwind. Modeling has shown that South Carolina is “NO<sub>x</sub>-limited,” which means that reducing NO<sub>x</sub> is a much more effective strategy for lowering monitored ozone levels in South Carolina than reducing VOCs since most of the VOCs in our state are from biogenic sources.

During the hot summer months, ground-level ozone can reach unhealthy levels. Ozone has been associated with increased hospitalizations and emergency room visits, school absences, and reduced activity and productivity. Even at relatively low levels, breathing ozone can trigger a variety of health problems. Ozone can irritate the respiratory system, causing coughing, throat irritation, an uncomfortable sensation in the chest, and pain when breathing deeply. Ozone can worsen asthma and possibly other respiratory diseases, such as bronchitis and emphysema. When ozone levels are high, people with asthma may have attacks that require a doctor’s attention or the use of additional medication. Ozone can reduce lung function and make it more difficult to breathe deeply. Breathing may become more rapid and shallow than normal, limiting activity. In addition, breathing ozone can inflame and damage the lining of the lungs. Over a long period of time (months or years) this may lead to permanent changes in lung tissue, irreversible reductions in lung function, and a lower quality of

life. People who are particularly susceptible to the effects of ozone include children and adults who are active outdoors, people with respiratory disease such as asthma, and people with unusual sensitivity to ozone.

## **2. PM and Health Concerns**

PM is made of solid particles and liquid droplets in the air. Burning and dust-generating activities are direct sources of PM. Secondary PM is formed through chemical reactions downwind from sources of gaseous emissions. Larger particles are generally comprised of soil. Smaller particles are generated from the burning of fossil fuels, like gasoline in cars, diesel in trucks and coal used by power plants. PM<sub>10</sub> includes particles 10 micrometers in diameter and smaller. PM<sub>2.5</sub>, also called fine particulate, includes particles 2.5 micrometers in diameter and smaller. The EPA regulates both PM<sub>2.5</sub> and PM<sub>10</sub> through the NAAQS.

PM can also have significant impacts on the health of sensitive groups such as children, people with lung disease, and people who are active outdoors. PM is small enough to invade the respiratory system. It can damage lung tissues when it reaches the alveoli, which are the tiny air sacs where we take in oxygen and unload carbon dioxide, thereby reducing lung capacity. PM<sub>2.5</sub> can get deep into the lungs, may even get into the bloodstream, and can affect the heart as well. Children are at risk because their lungs are still developing and because they spend more time outdoors. The elderly are also sensitive to PM pollution. Scientific studies have linked breathing PM to irritation of the airways, coughing or difficulty breathing, decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat, nonfatal heart attacks, and premature death in people with heart or lung disease. Both short and long term exposure to PM, primarily PM<sub>2.5</sub>, can lead to these health problems. Short term exposure is measured on a daily basis. Effects such as nonfatal heart attacks and premature death are the result of repeated short term exposures, rather than a single instance of exposure to high PM levels. Long term exposure is measured on an annual basis.

## **E. Air Quality in South Carolina**

Following the January 11, 2016, attainment redesignation for Eastern York County for the 2008 8-hour ozone NAAQS, the State of South Carolina is designated attainment for all of the NAAQS. The Department ensures compliance with the NAAQS for criteria pollutants through air quality monitoring. Current South Carolina air quality monitoring data indicates that the air quality at all monitoring locations in the State is meeting all of the NAAQS, including the NAAQS for ground-level ozone and PM. The Department continues to maintain a representative network of ambient air monitoring sites for ozone (see Figure 1) and particulate matter (see Figure 2). Information regarding South Carolina's ambient air quality monitors is found in the yearly *Network Description and Ambient Air Monitoring Plan*.



Figure 1.

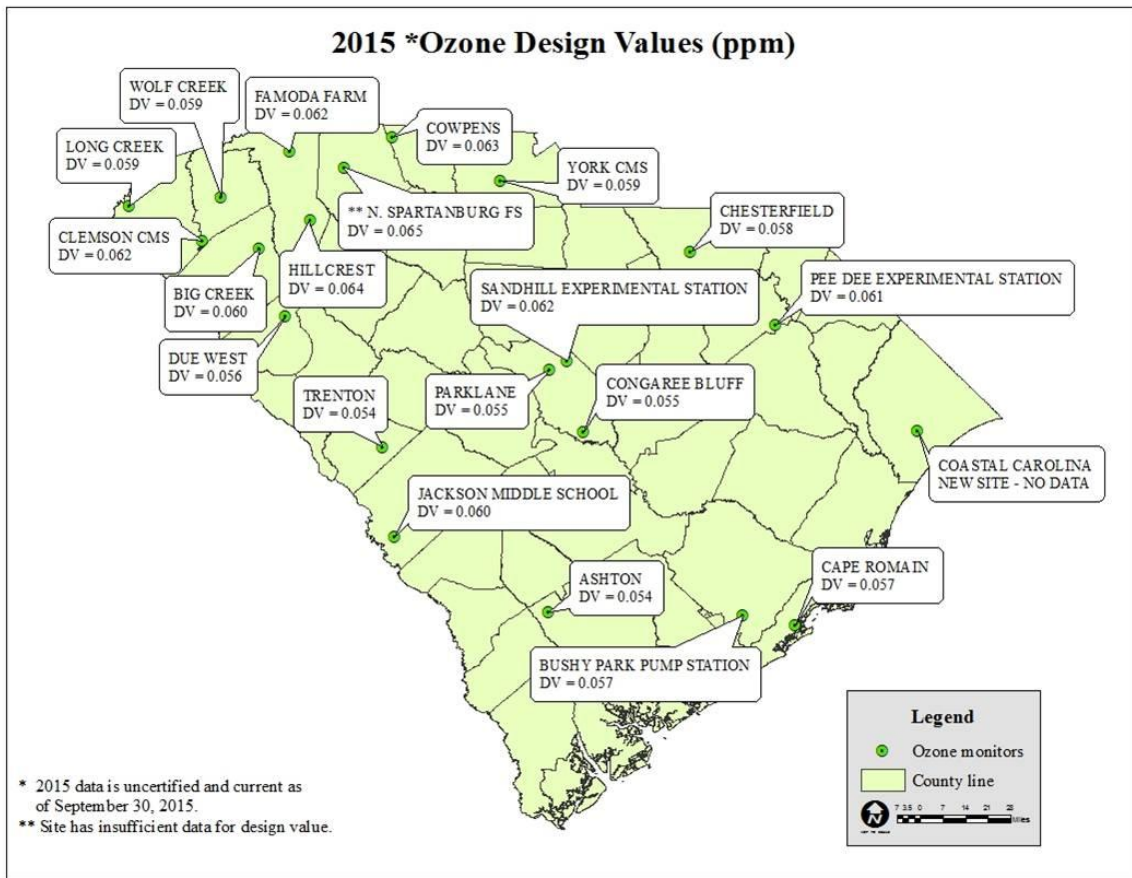
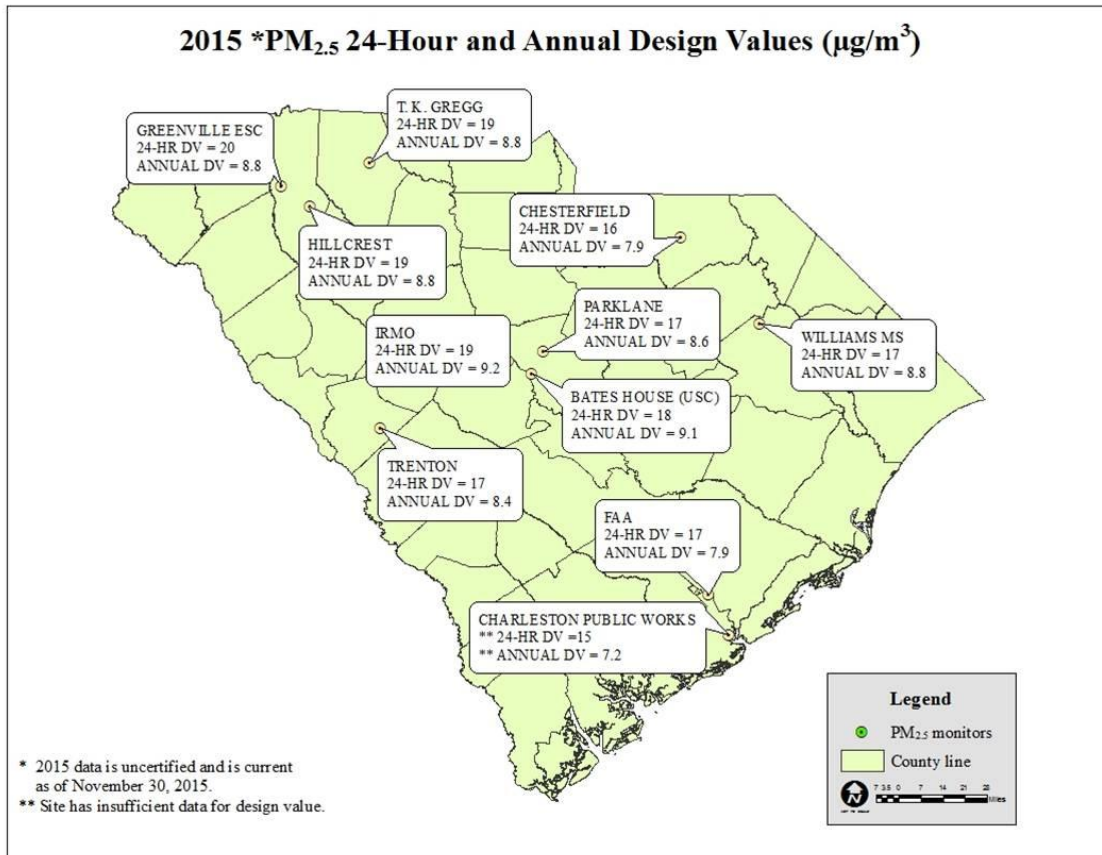
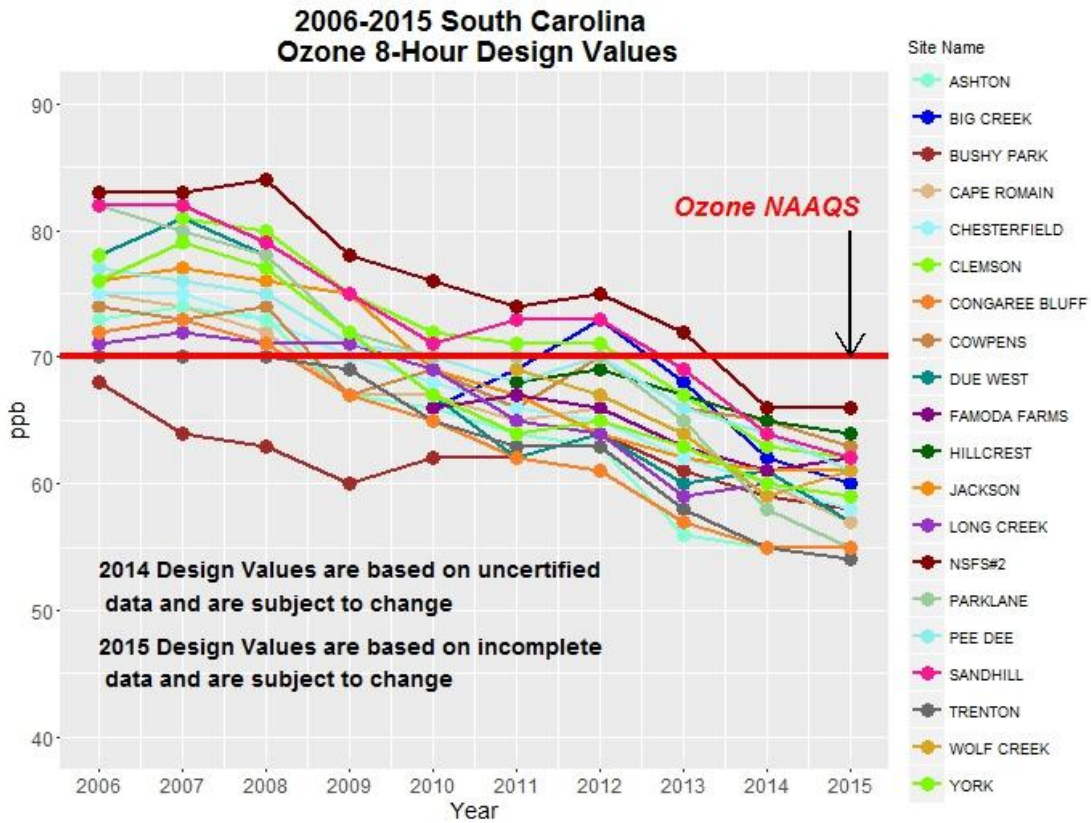


Figure 2.



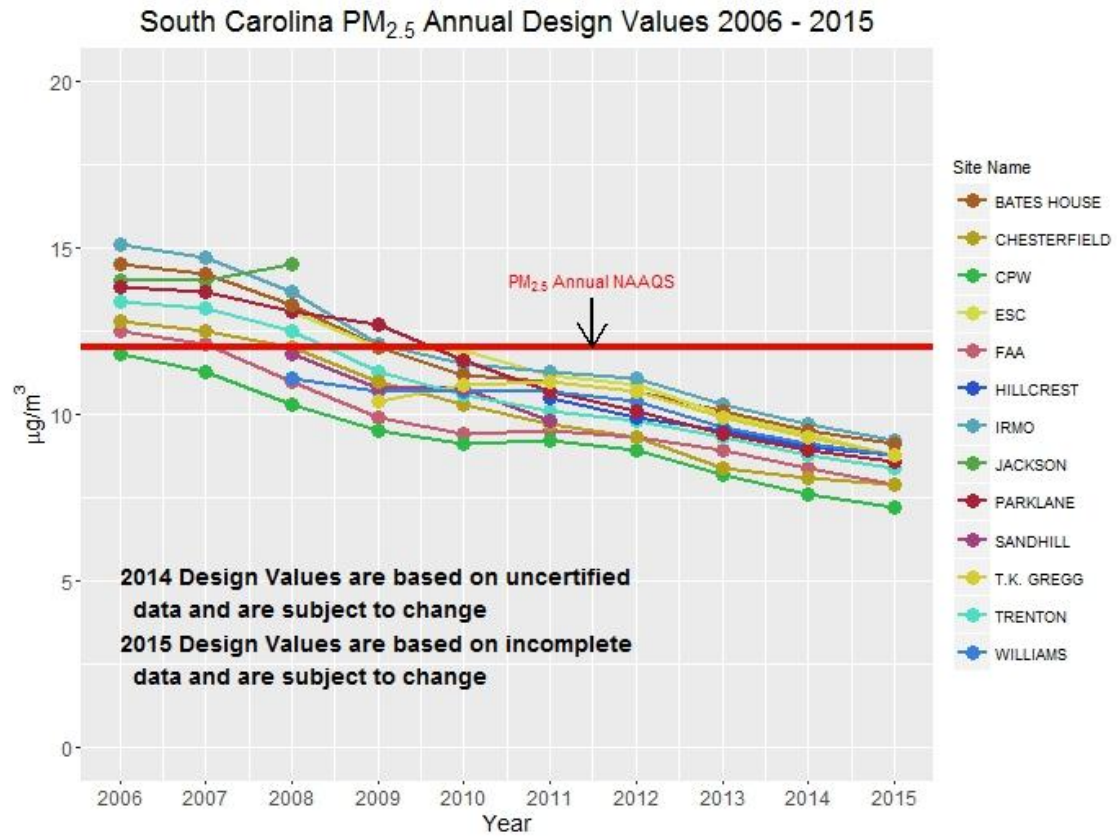
Over the past ten years, South Carolina has seen a continued improvement of both ozone and PM levels throughout the State. Graph 1 demonstrates a significant downward trend of ozone design values at all monitors across the State. The design values at all monitors are currently meeting the earlier 2008 and the new 2015 ozone standards.

Graph 1.

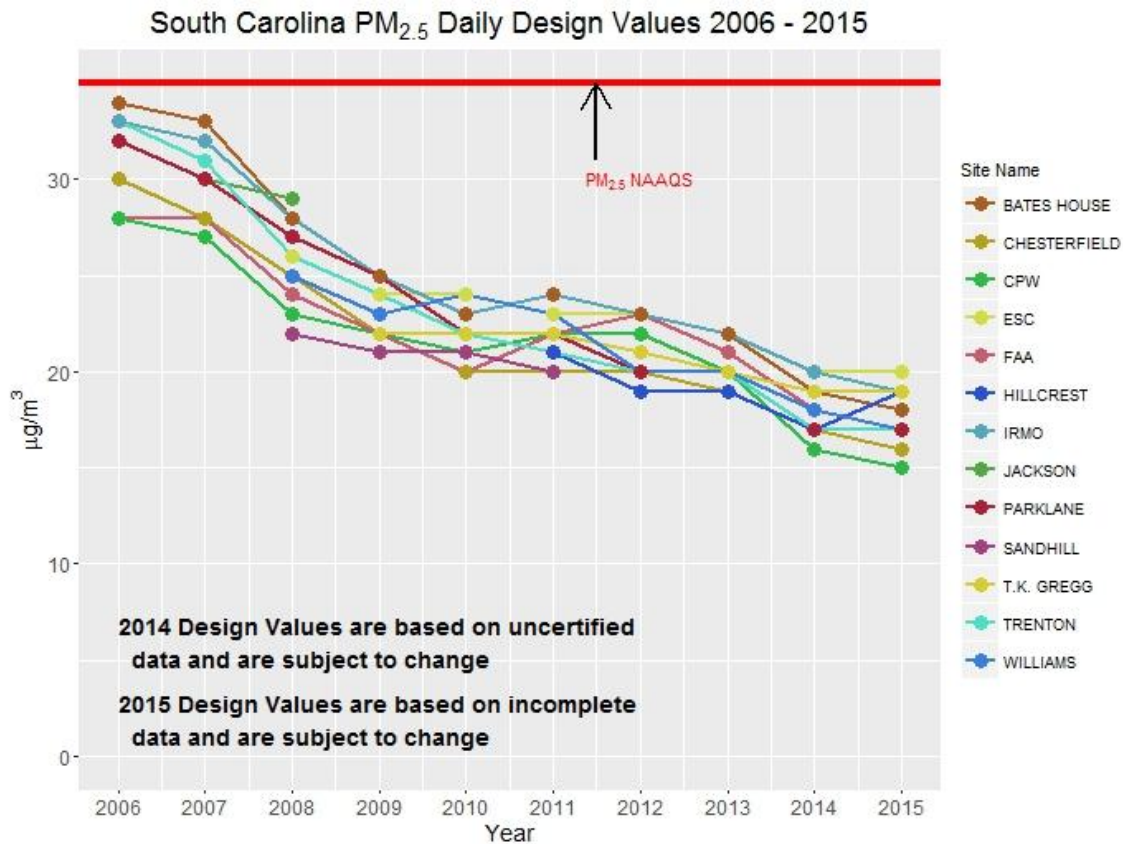


Graphs 2 and 3 demonstrate a continued downward trend in PM<sub>2.5</sub> annual and 24-hour design values, respectively.

Graph 2.



Graph 3.



### F. Electric Generating Unit (EGU) Emission Reductions

The Clean Air Interstate Rule (CAIR) was designed to reduce the amount of PM<sub>2.5</sub> (by reducing SO<sub>2</sub>) and ozone (by reducing NO<sub>x</sub>) crossing state lines in the eastern United States. The CAIR capped emissions of nitrogen oxides and SO<sub>2</sub>, and set up a market for facilities to trade emissions credits. CAIR was vacated in 2008 following litigation; however, on appeal it was remanded to the EPA without vacatur. South Carolina's CAIR regulations went into effect on May 1, 2009, replacing the earlier NO<sub>x</sub> SIP Call Program. The Department implemented CAIR in South Carolina through a modification of our State Implementation Plan (SIP). Two sources in South Carolina installed additional voluntary pollution control equipment achieving *actual* emission reductions. One facility installed selective catalytic reduction as early as 2003 and a flue gas desulfurization system in 2008, and another facility installed flue gas desulfurization in 2007.

The Cross-State Air Pollution Rule (CSAPR), designed to replace CAIR, is a “transport rule” designed to reduce the downwind impact of PM<sub>2.5</sub> and ozone crossing state lines in the eastern United States by reducing EGU emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>). States deemed to contribute to the nonattainment of downwind receptors are required to meet CSAPR. CSAPR sets emission budgets and allowances for coal-fired EGU sources of NO<sub>x</sub> and SO<sub>2</sub>, and sets up a market for facilities to trade

emissions credits. As stated above, South Carolina has participated in earlier trading programs including CAIR, the Acid Rain program, and the NO<sub>x</sub> SIP Call program. It should be noted that while some CAIR/CSAPR sources in the United States elect to buy credits, South Carolina sources continue to operate NO<sub>x</sub> and SO<sub>2</sub> controls to reduce these pollutants, which are ozone and PM precursors.

In the proposed CSAPR Update Rule for the 2008 Ozone NAAQS, South Carolina is not identified as an upwind contributor, and the proposed rule seeks to remove South Carolina from the CSAPR for the 2008 Ozone Season NO<sub>x</sub> Trading Program.

Emission reductions are also being achieved through the replacement of some of South Carolina coal-fired power plants with natural gas and nuclear power as a result of the EPA's Utility Maximum Achievable Control Technology (MACT) rule and other Utility generation replacement decisions. After the final MACT compliance date of March 2016, all remaining coal-fired utility boilers in South Carolina will have a full suite of emission controls. Between 2009 and 2012, SC realized EGU emission reductions of 24% for NO<sub>2</sub>, 56% for direct PM<sub>2.5</sub>, and 49% for sulfur dioxide (SO<sub>2</sub>). Additional closures and conversions to lower carbon fuel of older coal-fired EGUs are displayed in Figures 3 and 4.

Figure 3.

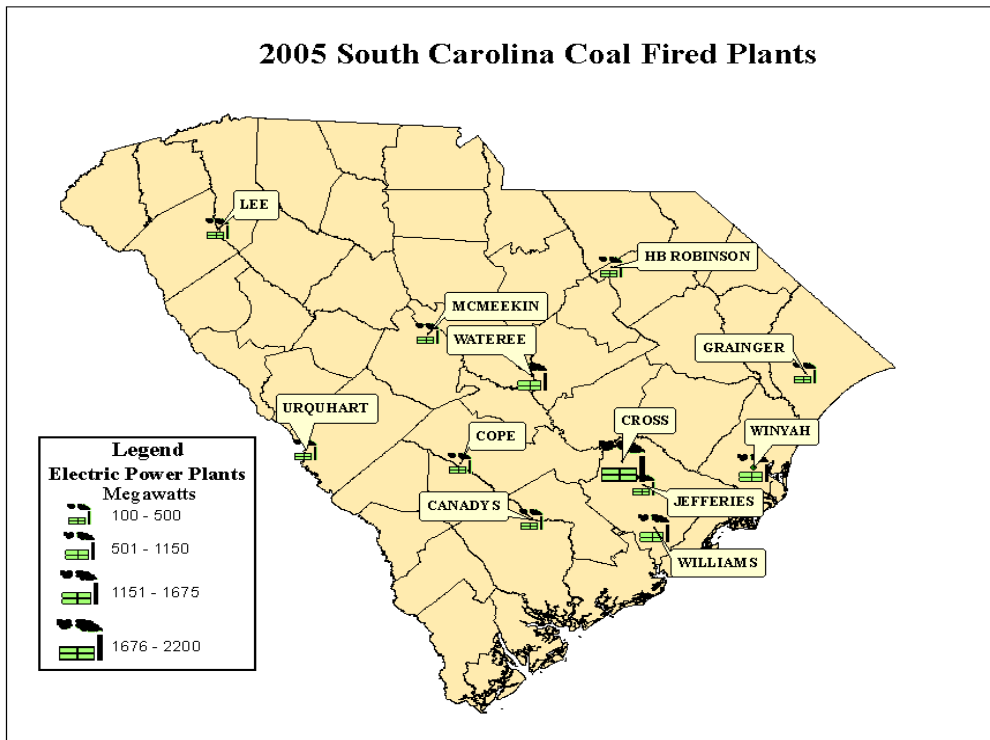
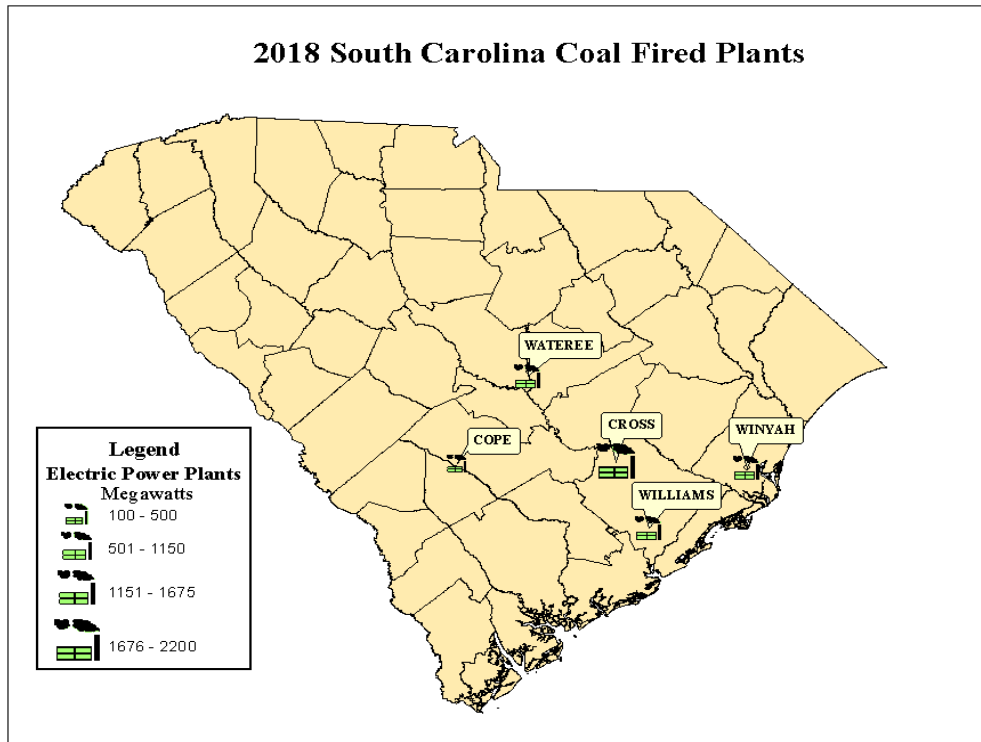


Figure 4.

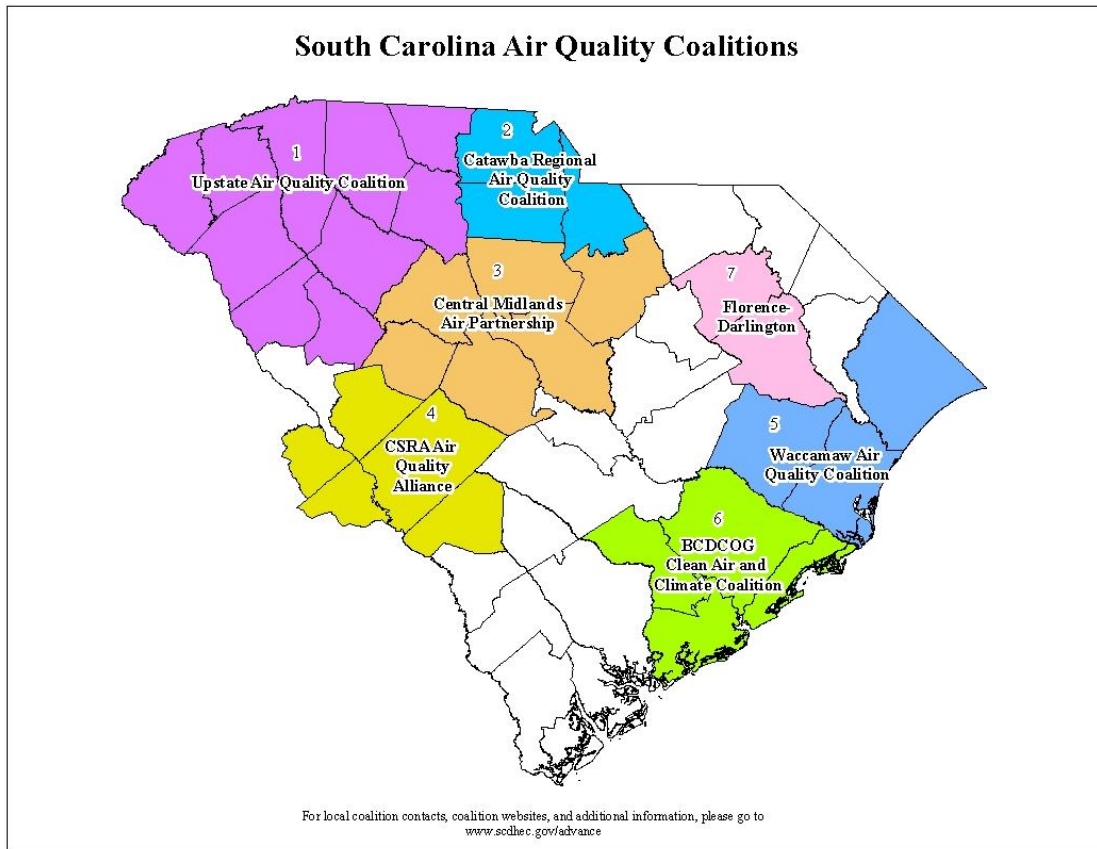


### G. Local Air Quality Coalitions

As mentioned in Section C, local air quality efforts in South Carolina have continued beyond the successful completion of EAC requirements. South Carolina’s air quality coalitions are the next generation of the EAC areas, and many of the stakeholders who made the EAC effort so successful are continuing their support of and commitment to the air quality coalitions as part of the Advance Programs. The air quality coalitions have been in existence for over a decade and provide an excellent framework on which to build continued success in the effort to improve air quality. The coalitions are comprised of local government officials, academia, industry representatives, businesses, environmental groups, and concerned citizens who implement voluntary programs at the local level. These groups meet on a regular basis to discuss local, state, and national air quality issues, receive the latest updates regarding local air quality monitors, and plan local voluntary programs that will improve air quality in their regions. The Department currently has assigned staff to assist each coalition with these endeavors.

The State currently has seven areas where coalitions exist or are being established. These are discussed below.

Figure 5.



1. Upstate Air Quality Coalition
2. Catawba Regional Air Quality Coalition
3. Central Midlands Air Quality Coalition
4. CSRA Air Quality Alliance
5. Waccamaw Air Quality Coalition
6. BCDCOG Clean Air and Climate Coalition
7. Florence and Darlington Counties



Working with the coalitions, the Department planned and held the first annual “South Carolina Air Quality Coalition Summit” on June 18, 2014. With over fifty attendees representing all seven of our coalitions, participants were able to meet with counterparts from around the state and learned what other areas were doing to promote voluntary air quality programs. All participants agreed that this Summit was resounding success and extremely beneficial.

Speakers included representatives from the Department, the local coalitions, the EPA, South Carolina Department of Transportation, and the University of South Carolina.



An agenda of the event is below:

<b>June 18, 2014</b>	
<b>Schedule</b>	<b>Item</b>
<b>9:30 am</b>	<b>Registration</b>
<b>10:00 am</b>	<b>Welcome and Introductions</b>
<b>10:30 am</b>	<b>The Importance of Air Quality Coalitions in SC</b> <ul style="list-style-type: none"> <li>• Myra Reece, Chief, Bureau of Air Quality</li> <li>• Robbie Brown, Director, Air Assessment &amp; Regulation Division</li> </ul>
<b>11:15 am</b>	<b>Coalitions are Important: A Case Study</b> <ul style="list-style-type: none"> <li>• Dean Hybl, Executive Director, Ten At The Top</li> </ul>
<b>Lunch</b>	
<b>12:30 pm</b>	<b>EPA's Advance Program</b> <ul style="list-style-type: none"> <li>• Laura Bunte, Office of Air Quality and Standards, EPA</li> </ul>
<b>1:00 pm</b>	<b>Partnership Opportunities</b> <ul style="list-style-type: none"> <li>• SC Department of Transportation</li> </ul>
<b>Break</b>	
<b>1:45 pm</b>	<b>Resources &amp; Funding Opportunities</b> <ul style="list-style-type: none"> <li>• Elizabeth R. Igleheart, Contractor for Arnold School of Public Health, University of South Carolina</li> </ul>
<b>2:15 pm</b>	<b>Time to Talk: Strengthen Coalitions</b> <ul style="list-style-type: none"> <li>• Discussion facilitated by Dean Hybl</li> </ul>
<b>3:15 pm</b>	<b>Closing Comments</b>

The 2014 event was such a success that a second Summit was scheduled for October 7, 2015. Due to severe flooding in the area at that time, the Summit was rescheduled for March 22, 2016. Topics for the event included the 2015 Ozone NAAQS, Clean Power Plan, Electric Bus Fleets, Solar Panels, Electric Charging, Opportunities and Grants, Advance Reporting Tool, Multi-Pollutant Study, Coalitions and Mobile Sources.

An agenda of the event is below:

<b>9:15 AM – 9:45 AM</b>	<b>Registration</b>
<b>9:45 AM – 10:00 AM</b>	<b>Welcome and Introduction</b> Welcome   Rhonda Thompson Introduction   Jack Porter
<b>10:00 AM – 10:20 AM</b>	<b>Air Monitoring</b> Monitor Results   Tommy Flynn
<b>10:20 AM – 10:45 AM</b>	<b>Clean Power Plan</b> Rule 111(d)   Robbie Brown
<b>10:45 AM – 11:00 AM</b>	<b>BREAK</b>
<b>11:00 AM – 11:30 AM</b>	<b>City of Seneca</b> Electric Bus Fleet   Ed Halbig
<b>11:30 AM – 12:00 PM</b>	<b>Solarize South Carolina</b> Solar Panels   Sara Hummel Rajca
<b>12:00 PM – 12:45 PM</b>	<b>LUNCH</b>
<b>12:45 PM – 1:00 PM</b>	<b>Advance Reporting Tool</b> Updates   Jack Porter
<b>1:00 PM – 1:30 PM</b>	<b>EPA Region 4</b> Opportunities and Issues   Kelly Sheckler
<b>1:30 PM – 2:00 PM</b>	<b>South Carolina Energy Office</b> Opportunities for the Coalitions   Trish Jerman
<b>2:00 PM – 2:15 PM</b>	<b>BREAK</b>
<b>2:15 PM – 2:45 PM</b>	<b>Multi-Pollutant Study</b> Joint project between SCDHEC and EPA   Andy Hollis

2:45 PM – 3:30 PM	<b>Coalitions - Successes and Initiatives</b> Projects and programs from around the state   Dean Hybl
3:30 PM	<b>Closing Comments</b>  <b>Networking and Future Planning</b>

**1. Upstate Air Quality Coalition:** The Upstate Air Quality Coalition was a very effective force during the EAC process. After redesignation to attainment for the 1997 8-hour standard, the group continued its efforts to improve air quality. The Upstate Air Quality Coalition is facilitated by Ten at the Top. Ten at the Top (TATT) was initially formed in 2005 as Upstate Together in order to educate business leaders, elected officials, and residents on the value of fostering regional collaboration and cooperation within the 10-county Upstate (Abbeville, Anderson, Cherokee, Greenville, Greenwood, Laurens, Oconee, Pickens, Spartanburg and Union Counties). TATT’s 53 member Board of Directors is comprised of a broad spectrum of community members to include representatives from the US House of Representatives, United Way, Upstate Forever, City of Anderson, Council of Governments, school districts, law firms, and small and large businesses. Together TATT has developed the Upstate Vision 2030 (<http://www.ourupstatesc.org/our-upstate-vision-collateral.php>) which outlines transportation, air quality, education, land use, and water as the five main indicators of where the Upstate is currently and ultimately where the Upstate is going. TATT closely follows air quality issues and is engaged in air quality at the local level, and has convened a 42-member Upstate Air Quality Advisory Committee.

The Upstate was initially concerned with ozone and PM<sub>2.5</sub> issues as pre-EAC monitored levels approached the NAAQS. TATT is very much still engaged on both fronts, but the perspective has shifted to a more holistic, multi-pollutant strategy as ozone and PM levels in the area have fallen since the early 2000s. As an example of their current efforts, the Upstate Air Quality Advisory Committee was recently awarded a grant and is currently offering non-restricted grants to up to 40 public and private schools in the Upstate who wish to participate in the Department’s Breathe Better (B<sup>2</sup>) Clean Air Program. TATT is also currently running air quality Public Service Announcements (PSA) throughout the ozone season on local television and radio and is working to print and distribute air quality educational materials. They also publish a “Tip of the Week” which is right in line with their PSA efforts to encourage citizens to keep from idling vehicles and pumping gas in the middle of the day, and to encourage citizens to reduce energy consumption and to properly maintain personal vehicles. Additional information about TATT and their ongoing regional air quality efforts can be found at [www.tenatthetop.org/](http://www.tenatthetop.org/).

Additionally, the Department has partnered with the EPA and the TATT to conduct a study to evaluate how proactive strategies and either existing or planned federal/state

measures to address multipollutant air quality management can be modeled to demonstrate continued compliance with the NAAQS and reduce population risk from exposure to ozone, PM<sub>2.5</sub> and selected air toxics. A primary goal was to identify and evaluate a local control strategy targeting emissions of air toxics of concern for communities while at the same time reducing ozone and PM<sub>2.5</sub> precursor emissions to maximize both health benefits and air quality improvements. The study provides an overview of the data and analytical steps needed for such an analysis. The results of this study demonstrated that improving air quality in areas already attaining the NAAQS can yield significant health benefits. This study can also inform and help attainment areas assess actions to keep ozone and particulate matter levels below the level of the NAAQS to ensure continued health protection for their citizens, better position such areas to remain in attainment, and help all areas efficiently direct available resources toward a more cost-effective strategy.

In general, local area perspective and expertise play a large role in successfully implementing any voluntary emissions reduction program. Additionally, this collaborative effort between federal and State technical staff allowed for knowledge transfer and feedback on new and innovative tools developed during the course of this project.

**2. Catawba Regional Air Quality Coalition:** The Catawba Regional Air Quality Coalition is comprised of three counties: Chester, Lancaster, and York. The coalition works closely with the Department on a number of projects, including the B<sup>2</sup> program in which twenty-five schools in the Catawba region have participated. The coalition also participated in the CONNECT program. “CONNECT Our Future,” which wrapped up in December 2014, was a three-year planning process undertaken by 14 counties in the Charlotte area, including the four counties of the Catawba Regional Air Coalition in South Carolina. Through extensive community engagement a regional framework for growing jobs and the economy, improving quality of life and controlling the cost of government was developed. A website containing tools and resources was established at the close of the project. A number of CONNECT priorities featured on the website benefit air quality, including clean construction assessment, freight transportation planning, active living, complete streets, and energy efficiency.

The Catawba region is unique in that it contained South Carolina’s only nonattainment area. The Rock Hill-Fort Mill Area Transportation Study (RFATS), which comprises the eastern part of York County, was designated as part of the Charlotte nonattainment area for the 1997 8-hour ozone standard in 2004. RFATS was redesignated to attainment for the 1997 standard in November 2012, but subsequently designated as a marginal nonattainment area for the 2008 8-hour ozone standard in July 2012. Although the eastern part of York County was designated nonattainment because it was assumed that it contributed to ozone exceedances at monitors in the Charlotte region, design values at the ozone monitors in York County remained in compliance with both the 1997 and 2008 ozone standards. Following the 2014 ozone season, the design values of all Charlotte area monitors met the 2008

ozone standard, and, on April 17, 2015, South Carolina requested that the York County nonattainment area be redesignated to attainment. On January 11, 2016, this area was officially designated as attainment for the 2008 ozone standard. Currently, the area meets the 2015 ozone standard as well.

The coalition met to discuss the way forward in March 2015, and a meeting focused on the upcoming 2015 ozone standard announcement is scheduled for June. The Bureau has supported the coalition by participating in York County's 2015 Green Business Conference, Earth Day events and community planning meetings.

As a maintenance area, RFATS works with the Department to demonstrate transportation conformity and utilizes Congestion Mitigation and Air Quality (CMAQ) funding for projects demonstrated to provide air quality benefits.

**3. Central Midlands Air Quality Coalition:** The Department has developed an air quality coalition in the Greater Columbia area, in partnership with the Central Midlands Council of Governments, which includes Fairfield, Lexington, Newberry, and Richland Counties.

The Central Midlands Air Quality Coalition (CMAQC) is a group of public, private, and citizen stakeholders who promote regional cooperation for air quality in the central midlands of South Carolina. The CMAQC steering committee is comprised of representatives from Richland County, Lexington County, the City of Columbia, the Central Midlands Council of Governments, the University of South Carolina, The Central Midlands Regional Transit Authority (The Comet), and South Carolina Department of Health and Environmental Control. The goals of the CMAQC are to raise public awareness and promote individual environmental responsibility through education, provide credible measures of air quality improvement efforts, and improve air quality through collaborative, sustainable solutions.



Over the past 18-24 months, the CMAQC has developed and received signatures on an air quality pledge of support to promote local air quality initiatives, increased school district-wide participation in air quality awareness programs, and developed the "Clean Air Midlands" campaign to provide local air quality information on social media, TV and radio public service

announcements, and the Clean Air Midlands website ([www.cleanairmidlands.com](http://www.cleanairmidlands.com)). The CMAQC will use the Clean Air Midlands campaign to educate residents and businesses on local air quality conditions and to encourage involvement in collaborative solutions for emissions reductions.

**4. CSRA Air Quality Alliance:** The Central Savannah River Area (CSRA) Air Quality Alliance is a group of counties from both South Carolina and Georgia looking to improve air quality at the local level. Members include local government members

from states, industry representatives, state officials, local residents, and even members of the local military installation. The group has been meeting since the “Early Action Compact” era and continues to attract around fifty attendees per meeting.

One of the greatest accomplishments of the Alliance is the Park & Ride facility off interstate I-20. This Park & Ride provides car-pooling opportunities for both local drivers working in the area and commuters traveling from the area to and from Columbia, SC. The facility opened in August and has a capacity of over 200 vehicles. This area, once facing possible PM<sub>2.5</sub> and ground level ozone non-attainment issues, is now meeting all NAAQS. For more information about this alliance can be found at <http://www.csra-airquality-alliance.com/>.

**5. Waccamaw Air Quality Coalition:** South Carolina’s newest air quality coalition represents Horry, Williamsburg, and Georgetown Counties. The group has been meeting on a quarterly basis to discuss opportunities to improve air quality in the area. These initial meetings have provided opportunities for sharing information on area air-related activities and for building relationships. The Department has also utilized this group with assisting with the placement of a new ground level ozone monitor in the area.

**6. BCDCOG Clean Air and Climate Coalition:** The Berkeley, Charleston, and Dorchester Council of Governments (BCDCOG) Clean Air and Climate Coalition group represents Berkeley, Charleston, and Dorchester Counties. The coalition has been a springboard for discussions on voluntary emissions reduction programs for industries, municipalities, and individuals, alike. Some of these varied programs include police fleet vehicle usage changes, business fleet anti-idling, municipal waste collection truck retrofits, Trident Ride-Share, and lawn mower exchanges. At times, information shared in coalition meetings led to additional actions.

A relatively unique partner in this community is the South Carolina Ports Authority (SCPA). The SCPA and the Department signed a Memorandum of Agreement in March 2007 for cooperation in reducing air emissions. An emission inventory based on 2005 emissions established a benchmark for future reductions. The Agreement was renewed in 2010 and again in 2013. Some of the SCPA’s emission reductions through DERA grants include tug boat engine replacements, drayage truck replacements, and repowered container handling equipment.

**7. Florence/Darlington:** The Department is working with local officials in Florence and Darlington counties to create an air quality coalition for that region of the state. This future coalition will be modeled after the other coalitions involving local governments, concerned citizens, and local industries. Staff has been in discussions with local government officials, industry contacts, and representatives from the local University about participating in the coalition.

On March 28, 2015, the area hosted the first annual “World Christian Conference: Stewards of the Earth –Making a Difference”. The conference was free and open to

the public. Speakers included representatives from Francis Marion University, Clemson University, local Reverends, Bureau of Air Quality Chief Myra Reece, and a Representative from the South Carolina Legislature. Attendees learned about solar energy, energy efficiency, and other topics that will help improve air quality in the region.

## **H. Statewide Voluntary Programs**

Currently, the Department implements several voluntary multipollutant emissions reducing programs across the State. Also, as a result of participation in the Ozone and PM Advance Programs, the Department is renewing its efforts with our air quality coalitions, and these initiatives are some of the tools being utilized.

These programs include, but are not limited to, the following:

### **1. Spare the Air Awards**

The Spare the Air Awards is an annual program sponsored by the Bureau of Air Quality to recognize innovative programs, projects, and individuals behind the scenes who continually go above and beyond the call of duty in protecting the environment. These environmental leaders represent workplaces, communities, schools, local governments and individuals who demonstrate their commitment to improve air quality.

For more information and a list of previous winners, visit <https://www.scdhec.gov/SparetheAirAwards/>.

### **2. Breathe Better (B<sup>2</sup>)**

The B<sup>2</sup> program is an anti-idling/clean air campaign. The goal of B<sup>2</sup> is to help protect the health and safety of children by reducing harmful vehicle emissions from cars and buses around school campuses. Solutions involve the efforts of students, faculty, administration, staff, local government and community partners working together. The program is offered to all areas of the State. Through a grant received from the Hollingsworth Fund, the Upstate Air Quality Advisory Committee is offering non-restricted grants for up to 40 public and private schools in Greenville County that start or continue participation in the Breathe Better Clean Air Initiative during the 2012-2013. This funding continues to be available through the 2015 school year.

The B<sup>2</sup> program is expanding to include the SC Flag Program. The SC Flag Program uses colored flags to notify faculty and staff, students and the community about outdoor air quality conditions. During ground-level ozone season (April-October), a flag is raised in front of participating schools to signify the level of air pollution for that day. The SC Flag Program will help to create awareness of outdoor air quality conditions so students can continue outdoor activities while protecting their health when air quality is in unhealthy ranges. This year, 5 free ozone flags were provided by the EPA. Several entities that were unable to purchase flags were given an opportunity to receive a set at zero cost.

For more information about the B<sup>2</sup> program please go to <http://www.scdhec.gov/HomeAndEnvironment/K12SchoolsStudentsTeachers/B2BreathTheBetterProgram/>.

### **3. Diesel Emissions Reduction Act (DERA)**

Reducing diesel emissions is an important air quality challenge as diesel emissions make up a significant portion of the on-road and non-road mobile source air pollution in South Carolina. Although more stringent emission standards are taking effect for new heavy-duty on-road and non-road engines, the older diesel engines currently in use will last a long time and will continue to emit large amounts of air pollution for years to come.

DERA established funding for the National Clean Diesel Campaign (NCDC). The NCDC has State Clean Diesel Program allocations for funding projects in each state and a National Funding Assistance program for larger regional competitive grants. The Department's Bureau of Air Quality administers the State Clean Diesel Program allocated funding by awarding subgrants competitively for projects that reduce diesel emissions. In FY12, South Carolina received additional funding from the National Funding Assistance regional competitive grants fund for targeted projects and additional statewide competitive subgrants.

More information about the Department's effort with the DERA program can be found at <http://www.scdhec.gov/DERA/>.

### **4. Lawn Mower Exchanges**

Although mobile sources, such as cars and trucks, are one of the largest sources of air pollution in South Carolina, lawn mowers and other outdoor gas-powered equipment contribute to air pollution as well. The Department partners with counties, local governments, businesses, and municipalities to help reduce air pollution by hosting lawn mower exchange events. The Department has been involved in promoting, planning, and coordinating lawn mower exchanges throughout the State since 2007.

Lawn Mower Exchange Events were popular several years ago. Due to a lack of funding and incentives, no events have been scheduled in South Carolina. However, interest remains high and the Department is prepared to assist coalitions when resources become available. Our manufacturing partners have expressed that they are focusing on areas, such as in California, where incentives for lawn mower exchanges are plentiful. On a related note, a commercial-scale electric equipment demonstration was held in the Charleston area in early 2015.

Additional information about emissions reductions regarding the lawn mower exchange program can be found at <http://www.scdhec.gov/lawnmowerexchange/>.



## **5. Take a Break from the Exhaust (TABFTE)**

TABFTE is a computer program that tracks voluntary actions employees take to reduce air pollution. Employees are awarded points for reducing the amount of vehicle miles traveled (VMT) during the work week by carpooling, staying in the office for lunch, telecommuting, and using mass transit. TABFTE also provides ground-level ozone forecasts April 1 – September 30. To date, the program has tracked over one million miles of VMT reductions. The program is currently offline for maintenance but it should be up and running by the end of the year.

## **6. SmartWay® Transport Partnership**

The Department's Bureau of Air Quality collaborated with the South Carolina Trucking Association and the EPA to host a workshop on the SmartWay® Transport partnership. The partnership is collaboration between the EPA and the freight transportation industry to reduce emissions and improve the efficiency of freight transportation. Partners in the program commit to benchmark operations and track fuel consumption. The Department's Bureau of Air Quality became a SmartWay® affiliate in 2013, and continues to promote the partnership when opportunities arise through newsletter items, updates to stakeholders, conference presentations and tabling events. Twenty-two South Carolina-based companies are currently SmartWay® Partners.

## **7. Local Policies and Voluntary Measures**

Several areas of the state have voluntarily implemented policies or ordinances that will improve air quality. One example is open burning bans that go beyond what the Department's state-wide regulations require. The burning bans not only improve PM emissions in the affected region and but also raise citizen awareness of how behavior affects air quality.

Another local effort is traffic light synchronization that is occurring in many areas of South Carolina. Synchronization reduces vehicle idling and improves traffic flow. The South Carolina Department of Transportation (SCDOT) assists local governments throughout the state with synchronization projects.

The Department maintains a webpage with suggested model language for ordinances and policies addressing a variety of measures that can be implemented. These can be found at <http://www.scdhec.gov/HomeAndEnvironment/BusinessesandCommunities-GoGreen/GreenhouseGasesActions/>

## **8. The Advance Reporting Tool**

In an effort to keep track of the initiatives across the State, the Department has created the Advance Reporting Tool (ART) which will allow air quality coalitions, industries, local governments, schools, and citizens to report all voluntary emissions reducing actions they take via the internet. The reporting tool, located at <http://www.scdhec.gov/HomeAndEnvironment/Air/AdvanceReportingTool/>, will also enable the Department to export all of the entries into an EXCEL spreadsheet that can be shared with the EPA and all of the air quality coalitions. The tool tracks the

pollutants reduced, location of the program, the amount of reductions (where applicable), contact information, and other relevant information that will be useful for other groups interested in replicating the programs listed.

The tool will be, in effect, a “living document” of South Carolina’s Advance program. An up-to-date report on the multipollutant reduction efforts of our air quality coalitions and other stakeholders can be shared with the EPA at any time. This will also enable our local air quality coalitions to share successful voluntary air quality programs that can then be replicated throughout the state. Additionally, we have enabled entries submitted to the ART to also be nominated for a “Spare the Air Award”, our Bureau of Air Quality’s annual award for air quality improvement.

## **I. Conclusion**

The Ozone and PM Advance Programs offer an opportunity for states and local governments to work in partnership with the EPA and each other that can help focus participants' efforts to keep their air clean. Participating areas will work with the State to evaluate initiatives that are suitable for their area, and select those that are effective and practical, and implement those control measures and programs. The State and the EPA can provide information about available tools and resources that may be used to help the area maintain air quality, and provide technical advice and other support.

South Carolina pursued air quality maintenance and improvement at the local level for over a decade, beginning with the EAC process. The Department recognizes the EAC efforts as successful not only because the affected areas avoided a nonattainment designation, but also because local areas became engaged in an ongoing effort to improve air quality as an outgrowth of their EAC efforts. By 2005 – just one year into the EAC process - all monitors in the affected areas were showing ozone design values below the 1997 ozone standard.

Local efforts did not diminish following the successful conclusion of the EAC process. Another example of the results of local efforts involves the 2008 ozone standard. When the standard was first finalized, several areas in the State had monitors exceeding 0.075 ppm. The Obama Administration reconsidered this standard which delayed the designation process, and our local coalitions took advantage of this opportunity. By the time the final boundary recommendations were submitted to the EPA in October 2011, every monitor in the state demonstrated that air quality had improved to the degree that all areas had a design value that met the 2008 ozone standard.

To date, air quality in our State continues to improve, and all areas currently meet the recently finalized 2015 ozone standard and the 2012 PM standard. Participation in Department-sponsored programs, such as the lawn mower exchange program, has been enthusiastic. Local areas have expanded Department initiatives, such as the B<sup>2</sup> anti-idling program for schools, in new directions. Several areas, such as the Upstate region, determined an Air Quality Advisory Committee was needed, independent of the Department, to expand efforts in their area. The Department is working with the local

coalitions to ramp up these efforts across the State through the Ozone and PM Advance Programs. South Carolina air quality coalitions intend to stay ahead of the ever-tightening curve of air quality standards, and the Department will continue to provide tools and support toward that end. It has been, and will continue to be, our goal to protect the public's health by meeting the EPA's air quality standards.