

NC Air Awareness

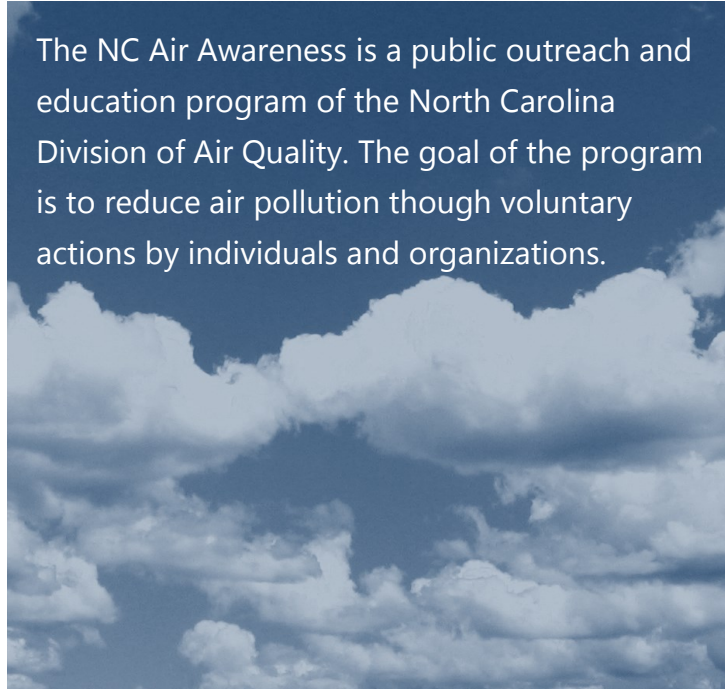
ANNUAL REPORT



Air Quality
ENVIRONMENTAL QUALITY

The NC Air Awareness is a public outreach and education program of the North Carolina Division of Air Quality. The goal of the program is to reduce air pollution through voluntary actions by individuals and organizations.

State Fiscal Year
2015



NC Air Awareness Annual Report

STATE FISCAL YEAR 2014-2015

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
PLANNING SECTION



Air Quality
ENVIRONMENTAL QUALITY

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Engage, Educate, Partner - Highlights

Environmental Education



- Provided direct environmental education to approximately 14,000 students
- Through participation in school-related events, we were also able to reach over 4,000 members of the community
- Reached several hundred younger children through special project Latino Students Project.
- NC Air Awareness conducted over 335 educational programs and events statewide in 36 different counties.

Trainings/Workshops



- Conducted 24 train the Trainer style air quality education workshops
- 430 teachers and non-formal educators learned about air quality in North Carolina and ways to bring air quality education to their students
- These teachers then reached approximately 24,000 students during the year through various instruction programs

Community Events



- Organized, hosted, or attended 83 community events across the state
- Held, or attended, 82 ozone season, partner, or networking events
- Through participation in community events we were able to reach 176,000 members of the general public
- Reached several hundred older adults through special project Know the Code!
- Triangle Air Awareness coordinator was able to reach 37,000 people through participating in only 8 community events
- Through participation in community events DAQ Fayetteville Region staff reached over 5000 people

Partnerships



- Connected with the business community and partners by hosting 70 ozone season or partner events
- Over 4,000 coalition members and partners attended either an ozone season, partner, or networking event held by our Local Air Awareness Coordinators
- These 4,000 coalition members in turn were able to deliver air quality messages to approximately 30,000 employees at their respective businesses and organizations.

Forecast Subscriptions



- Over 750 new subscribers to the Enviroflash system.
- Significant increase in individuals utilizing Apple and Android [AirNow](#) apps on mobile devices.

Online and Media Efforts



- 9,700 people receive eNewsletters or emails from Local Coordinators
- 5,000 people engaged through Facebook, Twitter, blogs, and local program website posts
- Through mass media efforts, such as billboards, print media, and TV/radio, estimated to have reached 125,500 people (estimate based on radio listenership, TV ratings and billboard statistics)



Message from the Director

I am pleased to present the NC Air Awareness program Annual Report for state fiscal year 2015, on behalf of the Division of Air Quality (DAQ). The NC Air Awareness annual report provides an accounting of key air quality education and outreach efforts for the division about efforts to improve air quality. The report also provides information about NC Air Awareness' engaging programs, activities and projects.

From our network of local air awareness coordinators, partners and DAQ staff, we collected and compiled data regarding educational and outreach services. Examples of such services provided include:

- Education efforts – kindergarten through 12th grade school presentations and activities, and training and workshops for educators to increase students' knowledge about air quality matters.
- Community engagement efforts – participation in fairs, festivals, Earth Day celebrations and other local events to reach the general public and increase knowledge about voluntary actions that can be taken to protect the air quality.
- Partnership efforts – partnering with organizations to help their employees learn about and use air quality forecasts to protect their health.

NC Air Awareness has been successful in implementing air quality outreach and education initiatives to many different audiences including schools, private businesses, communities, municipalities and other organizations. Much of the work is done in partnerships with like-minded organizations, groups and businesses that are willing to spread our air awareness messages to help their communities or organizations. The program reaches thousands of citizens annually, educating them about low-cost alternatives to help reduce air pollution and improve air quality.

In accordance with the North Carolina Department of Environmental Quality's (DEQ) mission, DAQ works with the state's citizens to protect and improve outdoor, or ambient, air quality in the state. To carry out this mission, DAQ operates a statewide air quality monitoring network to measure the levels of pollutants in the outdoor air, develops and implements plans to meet future air quality initiatives, assures compliance with air quality rules, and educates, informs and assists the public with regard to air quality issues. In addition to enforcing state and federal regulations, DAQ works with partners to reduce air pollution through voluntary actions. The NC Air Awareness program advocates voluntary actions such as relieving traffic congestion, reducing harmful tailpipe emissions, achieving and maintaining the national air quality standards, and reducing unnecessary vehicle idling. NC Air Awareness program also uses monitoring information to inform the public about air quality across the state. At the core of the program is the forecasting system (www.ncair.org/airaware/forecast), which produces daily air quality forecasts based on the Air Quality Index values for ground-level ozone and particle matter. As a result of these and other actions, North Carolina air quality has improved over the past two decades.

Significant progress has been made to improve air quality in North Carolina. However, important and challenging work remains today to maintain the current air quality standards and to insure clean air for all North Carolinians. To learn more about the stories and activities related to our dynamic education and outreach program, NC Air Awareness, please visit us online at www.ncair.org.

Sheila Holman, Division of Air Quality Director

2014-2015 Achievements

Air pollution is a problem for all of us. The average adult breathes more than 3,000 gallons of air each day. Children, although smaller in size, actually breathe more air per pound of body weight than adults and are more sensitive to air pollution. Older adults and active adults can also be more sensitive to air pollution and may need additional information and protection from harmful air pollution.

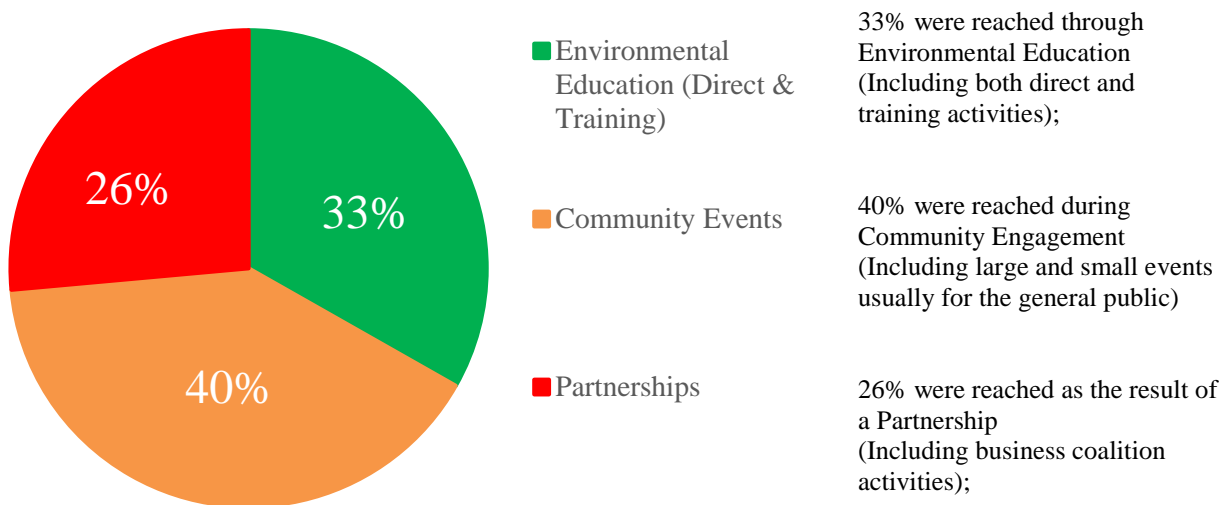
NC Air Awareness overarching topics include driving behaviors; vehicle maintenance; transportation alternatives such as walking, biking, and transit; energy conservation and energy alternatives; and open burning.

The primary goals of the NC Air Awareness program is to 1) inform and provide information about air quality issues, 2) provide tools to teachers and families so they can protect the health of students and their family members, and 3) empower citizens to take actions now or in the future to reduce air pollution.

This annual report outlines DAQ's overall work to inform North Carolina citizens about air pollution and how to reduce their impact on air quality which can benefit the entire community. The reporting period is in line with the state fiscal year (SFY) 2014-2015 and covers July 1, 2014 through June 30, 2015. This report focuses on three main elements of the NC Air Awareness program: **education, community engagement and partnerships.**

Overall, the NC Air Awareness programs and projects connected with North Carolina citizens throughout the year reaching approximately 269,000 individuals with air quality messages. Of the total number of people reached by NC Air Awareness in the fiscal year 2014-2015, the following percentages were reached as a result of environmental education, community engagement, and partnership activities respectively:

Percentage of the total number of citizens reached by category



The three main elements of the NC Air Awareness program: **education, community engagement and partnerships** – are further broken down into six subcategories. Throughout the report you will see graphics (shown below) to highlight the key programmatic and outreach methods utilized by the NC Air Awareness Program.



Environment
al Education



Partnerships



Community
Engagement



Trainings/
Workshops



Forecasts



Online /
Media
Efforts

Percentage of total people reached with air quality information (approximately), by subcategory



← 269,000 citizens total →

■ Training	9%
■ Education	5%
■ Community Engagement	18%
■ Partnerships	11%
■ Forecast Subscriptions	4%
■ Media Outlets	53%

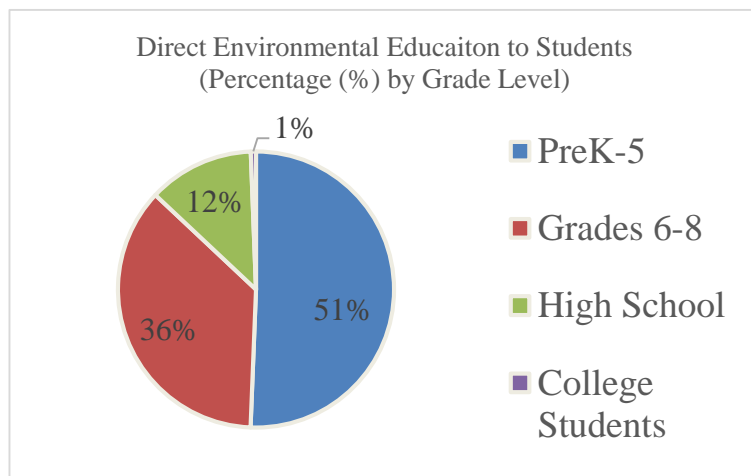
Environmental Education



Environmental Education (EE) at its core is about working with individuals, and communities, in transitioning to a society that is knowledgeable of the environment and its associated problems, aware of the solutions to these problems, and motivated to solve them. NC Air Awareness conducts many direct environmental education programs and projects which has DAQ staff, local coordinators, or partners working hand in hand with people. The local air awareness coordinators and DAQ staff venture to educate and inform the public through classroom presentations and afterschool programs, summer camps, science fairs and similar events. By utilizing these and other education channels, NC Air Awareness has directly worked with and reached thousands of kindergarten through 12th grade (K-12) and university students, teachers, parents and community leaders.

K-12 Education

In SFY 2014-2015, approximately 10,000 K-12 students by conducting hundreds of educational programs. Fifty-one percent of these programs was directed to younger grades while 36% was for middle school students, and 12% for high school age students.



By providing relevant activities and distributing materials through K-12 environmental education, local air awareness coordinators and NC Air Awareness staff engage directly with students and teachers. Engaging with students helps teach the next generation how to keep our air clean and healthy for everyone. Activities on a variety of air quality topics are presented. Many of the projects and lessons offered are adopted from proven environmental education curriculums, like EPA¹, or developed by DAQ to meet a specific need. All of NC Air Awareness education lessons and activities align to the NC Essential Standards. Some topics include:

- Driving Choices: Cars and Air Quality
- Electricity Efficiency and Air Quality
- Air Quality and Health
- Energy Efficiency
- Air and the States of Matter
- The Chemistry of Combustion

K-5

In collaboration with the local air awareness program in the Triangle region, DAQ completed a free air quality education curriculum for grades k-5 called *The Adventures of Clair and CAM*. (<http://ncair.org/airaware/edu/>) The curriculum is



Kingwoods Elementary, Cary NC. Teresa Colon (DAQ) working with K-5 students.

¹ EPA Environmental Education- www.epa.gov/students/ & airnow.gov/index.cfm?action=learning.forteachers

paired with the program’s mascots, Clair, the Clean Air Explorer, and CAM, the Clean Air Maniac. Clair and CAM help teach children about the properties of air, the difference between ozone and particle pollution, the health effects of air pollution, and the benefits of carpooling and other alternative forms of transportation. Clair and CAM also participate in many community events, fairs, festivals and parades in the Triangle region.

Clair and CAM Mascots during an air quality FLAG raising program at an elementary school.



MIDDLE SCHOOL

In September 2014, Catawba Area Air Awareness and Charlotte Area Air Awareness participate in events such as Riverfest speaking with hundreds of people daily. Local air awareness coordinators provided air quality-related education activities to 110 fifth graders from elementary schools along the Catawba River in Gaston and Mecklenburg counties. Educational activities included Science, Technology, Engineering and Math education (STEM) focused lessons and engaging activities. Four schools had a 25-minute session at the booth where they were able learn about the properties of air using molecular models, asthma and its effects on the cardiovascular system, and compared school bus and hybrid engine exhaust during a “Sock It” demonstration. Students also participated in discussions and demonstrations about acid rain and fuel combustion.

HIGH SCHOOL

DAQ completed modules for our first high school air quality curriculum titled *It’s Our Air* (IOA). IOA is a free, North Carolina specific curriculum² that includes a series of activities and videos focused on air quality developed for Earth and environmental science teachers and educators to use with students. IOA is designed to help students develop a better understanding of the science and technology that helps to explain, monitor, predict and protect air quality. IOA engages students in learning the science of air quality using a variety of hands-on activities and dynamic video segments. The activities and videos provide a comprehensive curriculum that can be used as is or can be adapted by teachers to fit their course needs.



The curriculum consists of three modules: Air Pollutants and Their Sources, Predicting Air Pollution, and Problems and Solutions. These modules contain 16 structured, hands-on classroom and field activities in which students use data analysis, experimentation, creativity, research and mapping to understand air quality science and issues. 10 short videos are associated with specific concepts or activities with the goal of enhancing learning via animated illustration of scientific concepts, “virtual” field trips, and interviews with scientists. Videos feature an engaging host/teacher and a diverse group of NC high school students.

² See It’s Our Air at- www.itsourair.org/curriculum

Taking Education Outside (the Classroom)

While many of our programs are designed to reach students in their classroom settings, NC Air Awareness often is working outside the classroom to better explain certain topics. Much of NC Air Awareness work focuses on reducing harmful tailpipe emissions and as a result has several different programs to teach students about motor vehicles and choices students can make as drivers to improve air quality. Keith Bamberger out of the DAQ Asheville regional office often works with high-school students to make sure they know where some of our air pollution comes from and what individual choices students can make to reduce tailpipe emissions.



Environmental Education at CHER camps (left) and Keith Bamberger (below) talking with students about vehicles and how they contribute to air pollution in NC.



In addition to taking students outside the classroom to look at vehicles, the program also supports efforts to get students out into nature to learn about air quality. NC Air Awareness staff at the central office continued a partnership with the Center for Human-Earth Restoration (C.H.E.R.) to provide environmental education to underserved students in Wake County during the summer. C.H.E.R. is an educational nonprofit organization dedicated to providing environmental programs to marginalized communities and works to improve the children's relationship with the natural world through ecological restoration, nature journaling workshops, camps, seminars and after school programs. NC Air Awareness cooperated with the summer camp sponsored by C.H.E.R and, over the course of seven weeks, provided environmental education to approximately 150 children through a variety of activities and lessons taught on topics related to air pollution.

Activities were conducted in three locations: Temple Flat Rock (Wendell), Carroll Howard Johnson Environmental Education Park (Fuquay-Varina), and Lincoln Heights School (Fuquay-Varina). Students from 6th to 8th grades learned about fuel combustion, lung capacity and health effects, and how to identify lichens as bio-indicators of air pollution. Some students also learned about the health effects of burning trash and proper trash disposal methods.

Training and Workshops



North Carolina is home to many different types of educators in many different types of settings. NC Air Awareness works to train future and influential environmental educators and classroom teachers to ensure air quality is incorporated into activities at their schools, education centers and museums. DAQ provides and supports unique outdoor and environmental education workshops for teachers looking to excel in environmental science and air quality instruction. The DAQ hosted many train-the-trainer type workshops throughout the state. For example, 20 formal and informal educators participated in the Ground Level Ozone: Advanced Air Quality Workshop on August 4, 2014, at Purchase Knob. The educators learned about ground level ozone and air pollution, how to identify the effects and ways to help their students prevent air pollution and save money at the same time. Educators then brought this air quality information, tips on how to protect health, and ideas to reduce air pollution back to their students and communities. In total, DAQ staff conducted 24 workshops and trainings throughout the year working directly with 430 teachers. These teachers then bring air quality education back to their classrooms and education centers where they reach over 23,000 students throughout the year. Additional workshops or training events will be held in the upcoming year to support the launch of the high school air quality curriculum project *It's Our Air* and introduce the teachers to our STEM and Latino curricula.



Educators at the Advanced Air Quality Workshop in the Great Smoky Mountains

For the Air & Waste Management Association's 108th Annual Conference & Exhibition



Students project and 2) the Know the Code! older adults project. In this presentation we discussed identifying underserved populations, data collection, analysis and the piloting process. Our presentation focused on the successes and challenges encountered in developing a focused outreach campaign and the importance of strong partnerships to accomplish common goals.

NC Air Awareness staff also frequently presents at various conference and workshops to share resources, promote habits that improve air quality and learn about emerging trends in outreach and education related to environmental topics. This year, staff presented at the international Air & Waste Management Association's 108 Annual Conference & Exhibition in Raleigh, NC. The presentation was within the *Public Participation, Economics, and Partnering; Challenges in Education, Training, and Outreach* topic of the conference. NC Air Awareness staff presented "Reaching underserved populations through partnerships: Lessons from focused education and outreach initiatives to Latino students and older adults by the NC Division of Air Quality." The presentation focused on two of NC Air Awareness's initiatives 1) the Latino

Community Engagement



Air quality affects everyone in a community. NC Air Awareness provides outreach to citizens and their communities by maintaining an active presence in six metropolitan regions³. Through community engagement programs, DAQ works to provide an open forum for discussion with the general public, who might not be otherwise exposed to air quality information in North Carolina.

The public learns about the science of air quality, effects on health, air quality forecasts and various other programs. Community programs include, but are not limited to: ozone forecast season events, local and community events and festivals, regional and state fairs, online efforts, mass media and Enviroflash. Participating in these events reaches larger audiences and establishes widespread understanding of air quality issues. Additionally, interacting with the general public at outreach events has enabled local air awareness coordinators to find new partnerships with organizations or businesses that have similar goals.

Local and Community Events

NC Air Awareness participates in more local and community events of all sizes collaborating with municipalities, religious organizations, non-profit groups, after-school programs, childcare facilities, Rotary and Kiwanis clubs, and many others. We provide presentations, hands-on activities and recommendations on how to reduce air pollution and save money.

Greensboro Earth Day Fair event



The program also participates in many Earth Day and Earth Week activities. During the summer, Triad Air Awareness taught a lot of kids about air quality and how their personal actions impact the environment, empowering them to make good choices for cleaner air. Lorelei indicated that the summer programs at local churches and YMCAs are great fun to do and reach a lot of people, and so are the community fairs such as the Greensboro Earth Day Fair. Local Girl Scout troupes, helped work at the fair to earn their “air badge”. By working with a variety of community groups, these programs help inform and protect many different types of North Carolina citizens, including more sensitive populations such as older adults and children.

Triad Air Awareness also participated in the Greensboro Earth Day Fair, High Point Earth Day activities, Wake Forest University Earth Day Fair, the Town of Kernersville Earth Day Fair, and the Town of Winston Salem events.

³ Charlotte, the Triangle, the Triad, Asheville, Hickory, and Fayetteville

**Making connections: City of
Winston Salem bike to work event
(right)**



Triad Air Awareness partnered with the City of Winton Salem as they hosted their Bike Month activities. Activities included Walk/Bike to School, Walk & Roll event, and specific Bike to Work activities for commuters. NC Air Awareness also participates in several larger community events, such as regional and state fairs and festivals serve NC Air Awareness as a way to engage with a wide range of local visitors. Air quality and sustainability messages prompt people to consider their choices about transportation, energy use and other actions that affect air quality. Local and regional fairs and festivals are also important events for outreach opportunities. By staffing a booth, or “tabling,” local air awareness coordinators have been able to speak with businesses, organizations, employees and other visitors.

Enviroflash Subscriptions



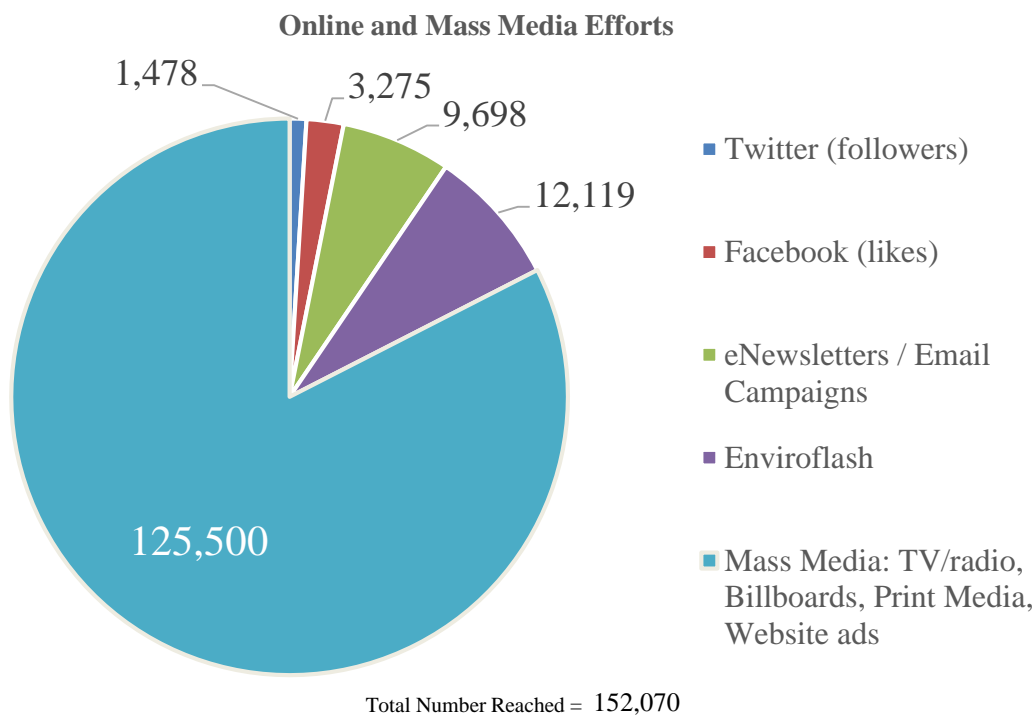
North Carolina citizens have many options for finding and receiving air quality forecasts so they can take steps to better protect their health. NC Air Awareness utilizes and promotes Enviroflash,⁴ which sends e-mails about the air quality forecast to participants’ inboxes. The message is the same air quality information that the local radio or television stations provide, plus suggested safety measures when levels are unhealthy. There are almost 6,000 Enviroflash subscriptions in the entire NC Air Awareness coverage area. An increasing number of citizen us other weather apps and mobile applications to access both weather and air quality information. NC Air Awareness anticipates the use of EnviroFlash to stagnate or decrease in the coming years as more people use other means to find and use the air quality forecast. Apps like Air Now on iOS has increased in popularity. (<https://itunes.apple.com/us/app/epa-airnow/id467653238?mt=8>). Please refer to Appendix A for more information.

⁴ Enviroflash- www.enviroflash.info

Online and Media Efforts



Utilizing various mass media and online efforts is a way for NC Air Awareness to reach a large population that we might not be able to reach face-to-face. Online and social media efforts can also now allow for follow-up and continuous communication to people reached during education, community engagement and partnership events. Such efforts vary by region and include Facebook, Twitter, blogging and e-newsletters. Approximately 10,000 people receive e-newsletters or email updates from NC Air Awareness in this fiscal year. Messages included practical and easy tips to reduce air pollution at work and home. Programs create engaging videos, have active online communities to spread information, or utilize online broadcast tools like newsletters or quick updates to reach their target audiences. NC Air Awareness continues to increase in its online efforts and capabilities, which could allow us to reach a younger demographic and wider audience. Using general information from listener-ship and viewer-ship information from TV and radio stations, in combination with other data the program estimated that over 150,000 people were reached through online and mass media efforts this fiscal year.



Partnerships



Partnerships continue to prove a valuable pathway for NC Air Awareness to accomplish many objectives with limited staff resources. By building and leveraging partnerships, NC Air Awareness can reach a much wider audience with its messages and programming. Furthermore, by utilizing local partners, NC Air Awareness can more effectively communicate to a specific community or region because of the established relationships the partner has developed. DAQ works closely with local air awareness coordinators, councils of government, private companies and many other partners to accomplish program goals. In the greater Charlotte area our business coalition roster includes over 75 companies. The Triad Air Awareness program's Business Coalition includes over 100 members including 30 highly active members who participate multiple times a year in air awareness activities. The Triangle Air Awareness program also includes approximately 100 listed members and had 68 members participate and be represented at an ozone season event. Fluctuations of the business coalition members occur each year often decreasing and increasing the total active membership by 5-10% during the course of a fiscal year. Overall there was between 1 and 5% increase in business coalition

members during this fiscal year. Partners benefit from an increased understanding about the connection between health and air quality, and between air quality and energy consumption. Additionally, partners gain access to materials, assistance with staging events, networking opportunities for their employees and on-site help with environmental initiatives. For DAQ, the benefit of working with partners includes better access to targeted audiences (e.g. older adults, younger adults, commuters in high congestion areas etc.), a more efficient use of resources and the ability to expand our reach. Partners include but are not limited to business coalition members. DAQ defines an education and outreach partner as an organization, entity, or individual who works collaboratively with NC Air Awareness to further the reach of our outreach messages and helps DAQ reach our goals and objectives.

Ozone Season and Networking Events

Networking events are often valued by our business partners. By hosting events and networking opportunities, and by awarding companies that have done outstanding work to reduce air pollution, NC Air Awareness strengthens our connections to local business. Ozone pollution is forecasted from April to October and some coordinators hold “kickoff” or “end of season” events to promote an understanding of ozone pollution, forecasting and reflect on the ozone levels experienced through the season. These events also recognize the efforts of citizens, businesses and other partners that help to improve the air quality in North Carolina. The events allow for increases business and community member interaction. Additionally, local TV personalities and meteorologists are honored at these events which increases the quality of the on-air reporting about air quality and air pollution.

Transportation Organizations

Working with transit providers and organizations that promote alternative forms of transportation has been an area of important work for NC Air Awareness. By working closely with service providers to cross promote initiatives and campaigns, we provide a service to bus riders and also work to reduce vehicle miles traveled (VMT) by single occupancy vehicles. DAQ staff and local air awareness coordinators make many local efforts throughout the year to reduce VMT, which reduces congestion and air pollution levels. Each year, Triad Air Awareness partners with Piedmont Authority for Regional Transportation (PART) and other transportation agencies to help the public and businesses understand the link between air quality and transportation choices. Commuter Challenges in various regions also draw attention to the task for reducing VMT as a benefit to air quality. Through community and employer events and a kick-off race, the Commuter Dash, participants are exposed to various "ride the bus" and "bike to work" events. This year, the Commuter Dash in the Triad region had hundreds of business partners and community members come out for road race to support clean air. Active adults and children who participate in the race learn about ways they can reduce air pollution and protect their health while staying fit. Information on the air quality benefits of van and carpools, as well as telecommuting, is presented to employers, employees, and community members throughout the year at these and other air awareness events.

Staff and partners in the Fayetteville region work on air quality community initiatives included connecting bike routes, planting trees and planning a park-and-ride system. These projects work to connect local business and community members to projects that improve both quality of life and air quality. Local coordinators and NC Air Awareness staff also provide important information Transportation Demand Management and town planners to help ensure air quality is a topic of discussion at their respective organizations and planning meetings. The Triangle Air Awareness Coordinator, after an invitation from the previous year's success, spoke again about alternate commuting options and the reduction of vehicle idling at local municipality events.

Business Coalitions

More than approximately 400 coalition members and partners attended ozone season, partner or networking events held by our local air awareness coordinators in CMAQ eligible areas of North Carolina. Topics at these events focused on reducing vehicle miles travelled by commuters, alternative transportation options, cleaner vehicles, and tips to reduce air pollution at home and work. Business coalitions are unique partnerships some

local air awareness coordinators make with area non-profits, small businesses and multinational corporations whose goals align with those of the NC Air Awareness program. Working closely with such partners helps coordinators integrate their air quality training and distribute information, educational materials and teleworking packages.

Local air awareness coordinators and Mecklenburg Air Quality program has built a business coalition by extending community engagement through efforts such as the *Race to the Beach* Clean Commute Challenge. The *Race to the Beach* challenge is an annual 13-week competition that encourages employees of coalition members to use alternate means of transportation throughout the summer. Between June and August, participants can log their clean commute round-trips. Clean commute trips are counted when a person uses an alternative transportation mode versus driving alone. Participating businesses receive recognition in three Charlotte Business Journal print and web advertisements during the months of June and July. These advertisements serve a dual purpose of giving recognition to participating businesses and promoting the campaign to other businesses.

With the help from our business partners NC Air Awareness has been able to better address air pollution from motor vehicles by working closely with the employees of various companies in congested and CMAQ eligible areas. In collaborate with partners the program has been able to develop campaigns that are of interest to employees and therefor received more favorably. For example, the Charlotte Area NC Air Awareness business coalitions went to their business partners for ideas on campaigns that would both improve employee morale and reduce air pollution. Out of their discussions, new ideas such as Don't Drive @ Lunch days in the region were designed to further reduce vehicle miles travelled.

Health Organizations

Healthcare and health advocacy groups, such as the American Lung Association, the Advocates for Clean Air and the Wake County Asthma Coalition, host quarterly or annual conferences and forums. Local air awareness coordinators often serve as expert panelists and talk about health-related air quality issues. These conferences also serve as a networking function by bringing together business owners with air awareness coordinators when there are common goals. Triangle Air Awareness staff continued to work with Wake Med's Wake Up Wake County and asthma educators at the hospital to learn more about the health impacts of air pollution and to find better ways to reach sensitive groups who are more susceptible to air pollution. NC Air Awareness staff partnered with NC Asthma Alliance to promote clean air and share tips on how asthmatics and people with COPD can take steps to protect their health with respect to air pollution. Additionally, throughout the year, staff attended health fairs as requested and worked with state employees at their annual health fair to information people about harmful air pollution and the connection to their health.

Solving Challenges

One of the challenges with any outreach program is providing information in a timely and relevant way – to the right people. NC Air Awareness strives to engage people who are part of sensitive and underserved populations, while maintaining a presence within our existing communities. We sought out two new projects in 2014-2015; the Latino Student project and Know the Code! project.

Working with Underserved Students

The Latino Student project was developed as an education and outreach effort for the fast growing Latino population in NC. Often an underserved group, the project goals are to inform children and their families about air quality issues, educational opportunities and voluntary actions they can take to reduce air pollution. This project consists of three main parts: (1) Education, (2) Spanish materials, and (3) Community engagement.

The Latino Students project initially started with the formation of a partnership with several triangle area schools

and partnerships. Moving forward, NC Air Awareness will work with Department of Public Instruction Dual-Language and Immersion group, local non-profits, and various school boards and groups to reach more students in the target population. The approach for each school will be different because each school follows unique programs according to the communities they serve. Three schools who supported the Latino Students project include: 1) Hodge Road Elementary, which has Full Spanish Immersion and Science Technology Engineering Math (STEM) Magnet programs, 2) Brentwood Elementary, which has Engineering-STEM Magnet program and 3) Smith Elementary, which has a International Baccalaureate program. This part will also be used to learn more about STEM and how DAQ can tailor our materials for STEM providers and instructors. Additionally, mini-workshops will help teachers to understand and expand air quality concepts and information and how these could be used to enhance their lessons.

New STEM and existing curricula will be available in both English and Spanish free for teachers to download from our website. Additionally, key outreach materials about idling and the AQI are available in Spanish on our website and in printed forms.

Click <http://deq.nc.gov/about/divisions/air-quality/air-quality-outreach/news/brochures-related-materials> and <http://deq.nc.gov/about/divisions/air-quality/spanish-pages/folletos> to see brochures and materials.

To make this project well rounded DAQ includes community engagement through Wake county Public School system (WCPSS). WCPSS Outreach and Communications Office promotes a series of small workshops, classes and events aimed at helping families engage with the school system and positively contribute to their children academic and social success called Parents Academies. This year, small workshops hands-on activities or “talleres” were held at Saint Raphael Catholic Church, the Hispanic Family Center (for Latinos) and Family Resource Center (for Afro-Americans). The DAQ NC Air Awareness team used this partnership to educate the communities about air quality and health.

Breaking New Ground

This year NC Air Awareness fully launched the Know the Code! (KTC) campaign to reach older adults with information about air pollution and provide them with tools to protect their health. Older adults have been identified as a sensitive group who may benefit greatly from an increase in knowledge about the air quality forecast and actions that can be taken to reduce exposure to ozone and particulate matter.

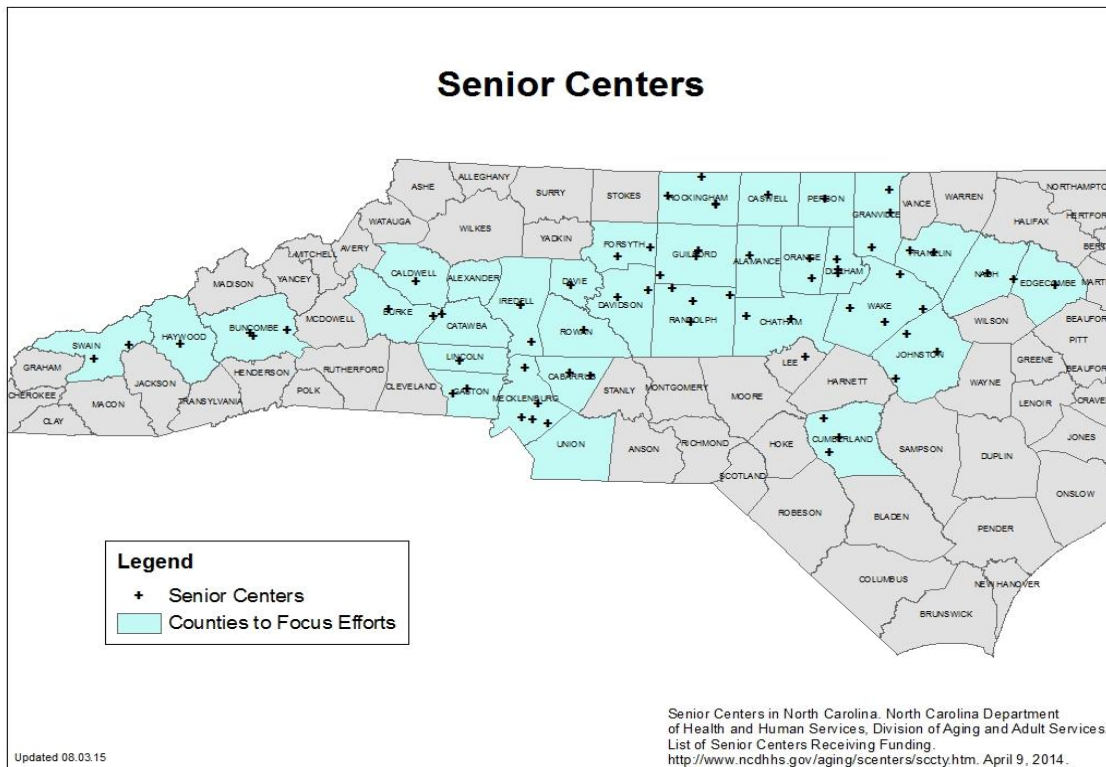
The goal of this project is to increase awareness and use of our air quality forecast (code) to help older adults in North Carolina better plan their outdoor activities and take steps to protect their health. The focus will be on older adults (55 years and older) who are active, as well as those who may have health issues, because these are the people most likely to be impacted by the air quality. The objective is to conduct outreach and education directly to older adults through presentations and materials, while also establishing partnerships with businesses and organizations that already provide services to older adults and would be willing to help us pass along our educational materials (indirect outreach).

We have established partnerships with the following organizations and many more:

- AARP- North Carolina
- NC Senior Games
- North Carolina Association on Aging
- North Carolina Division of Public Health

There are two phases in the Know the Code! project. Phase 1: Project Plan Research and Development was completed in November 2014. Phase 1 consisted of identifying underserved populations (senior centers on map), researching older adults, creating educational materials and establishing relationships with potential partners. Phase 2: Implementation and Program Evaluation involves piloting the materials and presentations while working to establish new partnerships and maintain existing partnerships. This will also involve organizing mini-conferences in each of the six regions to bring together any partners, potential partners, and interested. The majority of Phase 2 will involve conducting direct outreach along with collecting data to be used in the evaluation

of the program. Outreach will include working directly with Senior Centers and organizations that work with older adults.



Concluding Remarks and Looking Forward

NC Air Awareness’s vision is that all North Carolina citizens are aware of air quality issues, understand the air quality forecasts (AQI), are able to easily access tools to help protect their health, and are aware of actions they can take to reduce air pollution. NC Air Awareness overarching topics include driving behaviors; vehicle maintenance; transportation alternatives such as walking, biking, and transit; energy conservation and energy alternatives; and open burning.

We envision a persistent approach to our education (50%), community (25%), and partnership (25%) activities regularly delivering programs and engaging the community. This approach includes continuing to respond to requests, proactively working through partners, and looking for opportunities that engage the community.

Education

Through the education program, NC Air Awareness seeks to provide science based air quality information and health effects to educators and students so that they can have a better understanding of air quality. We will focus on in-classroom activities, webinars, science and summer camps, after school programs, and teacher workshops. We will enhance our air awareness curricula by including science, technology, engineering and mathematics (STEM) activities in English and Spanish especially for K-5. The Spanish curricula is being developed with the help of the DPI Dual-Language and Immersion program coordinators. The *It’s Our Air* project will be in its final phase. Teacher workshops will be planned for both K-5 and high school teachers regarding upcoming curricula promotion.

Community Engagement

Through community events, the NC Air Awareness program provides a gateway for the public to learn about the science of air quality impacts on health, air quality forecasts and the steps people can take to maintain air quality. Our goal is to continue participating in events covering a wider audience, such as fairs, festivals, Earth Day celebrations and Senior Games events. Additionally, we will proactively communicate with organizations and schools who conducted Earth Day celebrations in 2015 to secure our attendance in 2016.

Partnerships

NC Air Awareness works with area businesses, agencies and organizations to increase our education and outreach efforts. By working with partners, NC Air Awareness will continue expanding the discussion of air quality issues and be able to reach a wider audience. The program also encourages businesses and organizations to learn more about commuting alternatives, teleworking, idle reduction, utilizing the air quality forecasts, energy efficiency, cleaner transportation, emissions reductions opportunities, and individual and corporate responsibility for air quality. Our goals for this year are to actively engage with Triangle area businesses and to expand our network of state-wide organizations. Partnership development and maintenance can include attending one-on-one meetings, conferences, and workshops. Examples of partners include companies like Gregory Pool to reduce idling at the workplace and Triangle Transit and Piedmont Area Rapid Transit (PART) to reduce vehicle miles traveled (VMT) and improve alternative commuting options. By successfully working with partners throughout the fiscal year, NC Air Awareness has expanded the discussion of air quality issues with a variety of citizens that other outreach and education methods may not reach.

To protect and improve North Carolina's ambient air quality, regulatory and voluntary actions must be promoted. This principle is central to the DEQ mission and of DAQ's strategic plan for effective and efficient customer service. The health, benefit and economic well-being of the public depend partly on the education, information and assistance provided by the NC Air Awareness program's efforts. NC Air Awareness engages with and provides outreach and education to thousands of citizens annually. As a result, many use alternative forms of transportation, drive less, use less electricity and use the air quality forecast. These actions reduce air pollution, traffic congestion and help citizens better protect their own health and improve their quality of life.

Appendix A: Background Information

Program Funding

Recognizing the importance of citizen involvement and voluntary efforts to reduce air pollution, DAQ looked for funding opportunities to better accomplish its core goals. Additionally, the EPA encourages states to actively seek education and outreach projects as part of a comprehensive strategy to reduce air pollution. In 2008, DEQ entered into a grant agreement with the North Carolina Department of Transportation for the expenditure of Federal Highways Administration Congestion Mitigation and Air Quality Improvement (CMAQ)⁵ program funds. This agreement enables DAQ to implement education and outreach activities in certain areas across the state with air pollution problems and traffic congestion at a reduced cost to the division.

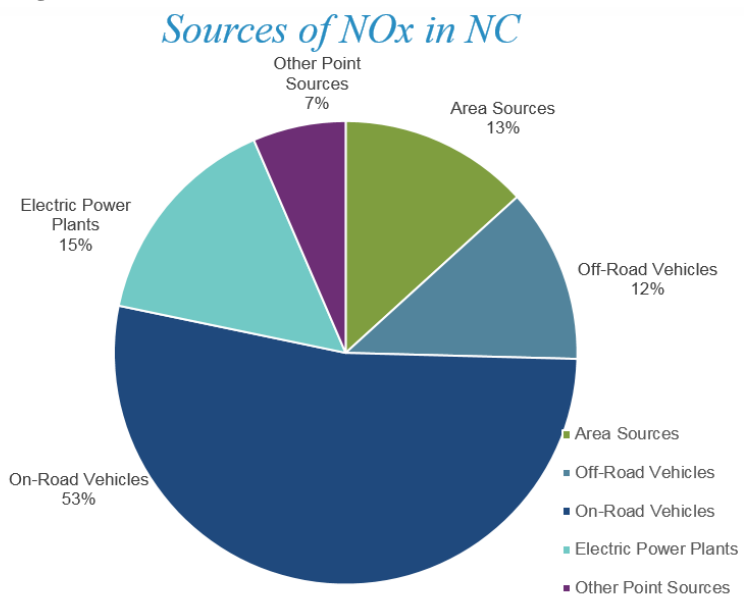
In general, 80 percent of the funding for NC Air Awareness, is provided through the CMAQ funds, with DAQ contributing the remaining 20 percent. The funding period of the grant is currently scheduled to conclude in December of 2016 and may continue through the end of 2017 with a supplemental funding agreement. The funding supports local air awareness coordinator contracts, kindergarten through 12th grade education, business coalition activities, community engagement projects and outreach through events, fairs and festivals.

At certain times over the past decade, North Carolina air quality monitors have measured levels of ground-level ozone and particulate matter across the state that were higher than federal standards. The good news is that significant emission reductions from major pollution sources, such as coal-fired power plants and motor vehicles, have already been realized through the federal regulations, the NC Clean Smokestacks Act and more stringent federal standards for vehicle engines and fuels.

Air Pollution Monitoring

Air pollution monitoring refers to measuring the concentration of pollution in the ambient (or outside) air through various sampling methods and equipment. DAQ and other local air programs operate a robust monitoring network that continuously measures concentrations of key air pollutants using methods established by EPA. For information on the state's current monitoring network, please visit <http://www.ncair.org/monitor/>. Ground-level ozone is monitored from April 1 to October 31, and particulate matter is monitored year round. Reported values are compared against the National Ambient Air Quality Standards (NAAQS)⁶ set by EPA.

Figure 1a: Sources of NOx in North Carolina (2012 Data)



Ozone is found in two regions of the atmosphere: at the ground level and in the upper elevations. Upper atmosphere ozone protects the earth from the sun's harmful rays, while ground-level ozone is the main component of smog. So, in regard to air pollution, ozone (O₃) refers to ground-level ozone. Both types of ozone are created by chemical reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOCs). Man-made VOCs play a small role in the formation of ozone, due to the abundance of natural, biogenic VOC sources in the

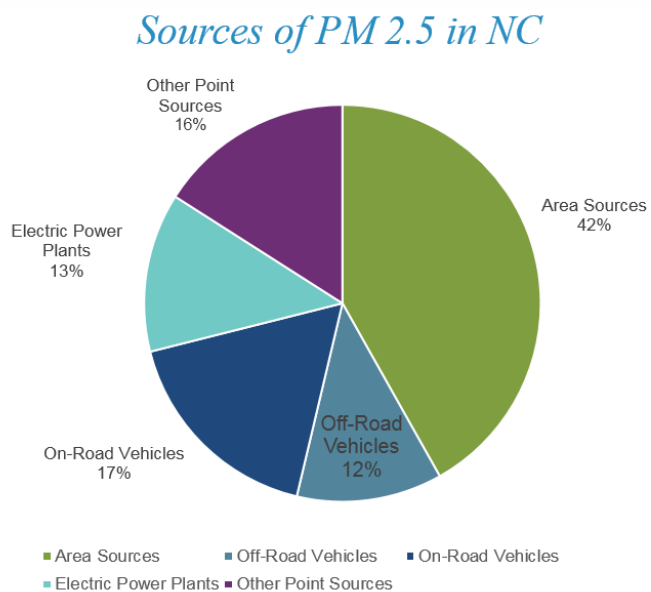
⁵ CMAQ program: www.fhwa.dot.gov/environment/air_quality/cmaq/

⁶ National Ambient Air Quality Standards- www.epa.gov/air/criteria.html

state. Figure #3 shows the primary sources of ozone pollution in the state. Many different sources contribute to NOx pollution, but with more than 60 percent, cars and trucks are the largest source (also known as on-road vehicles and mobile sources). The ozone-forming pollutants are emitted from mobile sources (cars and trucks), off-road vehicles, industries and others.

The graph below depicts the ozone trends in North Carolina. This graph indicates a downward trend in ozone concentrations. While ozone levels are influenced primarily by meteorology and human activities, particulate matter (PM) is affected by those factors as well as fires, storms and other unpredictable events.

PM levels have been decreasing, yet children, older adults and people with respiratory issues can be affected by these unforeseen changes in air quality. Air pollution irritates the lungs and respiratory system and may affect the heart. Air pollution may worsen asthma, trigger asthma attacks or cause the onset of asthma. Even healthy people may have trouble taking deep breaths on poor air quality days, and air pollution can damage lung tissue. Repeated damage, especially during childhood, can permanently reduce lung function. PM has been linked to serious cardiac problems, including arrhythmias and heart attacks.

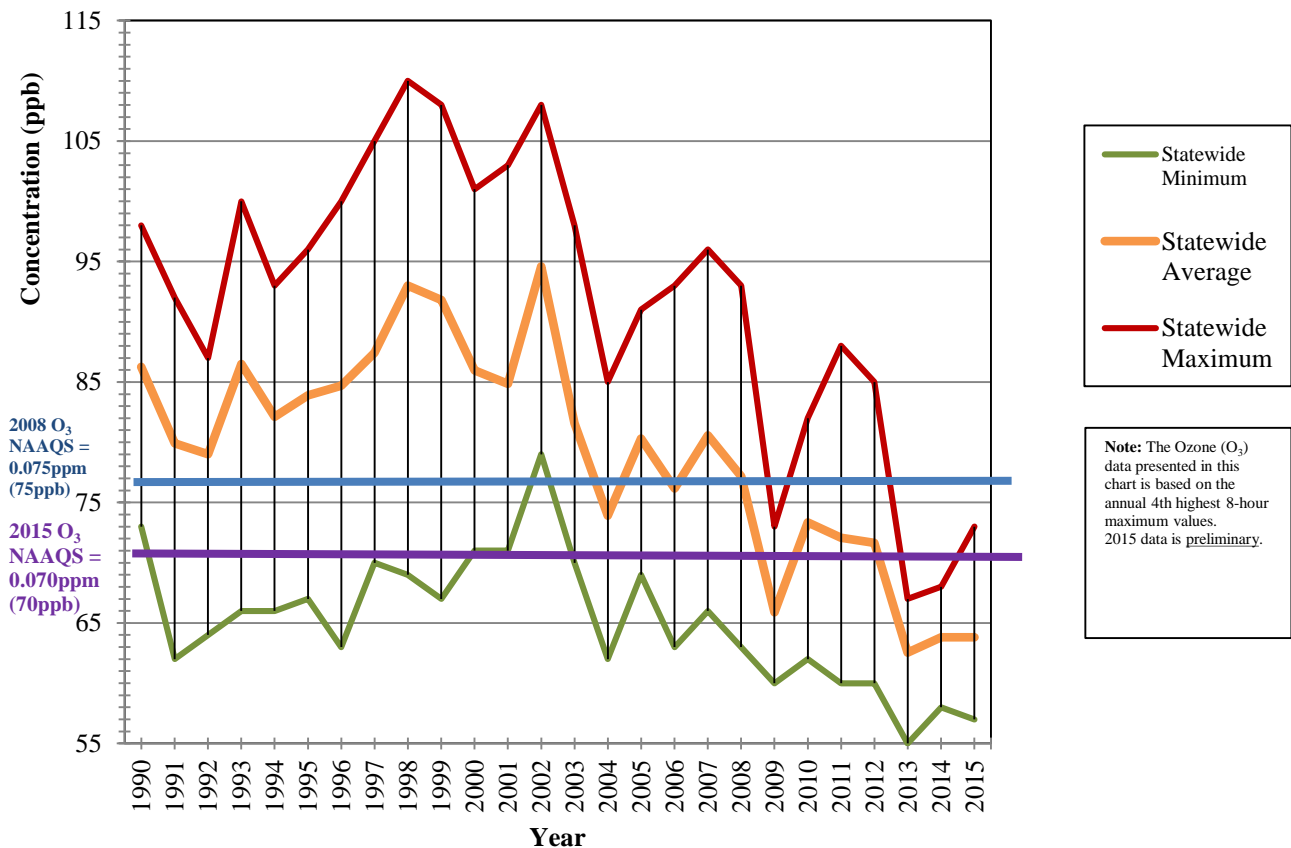


Sources of PM in North Carolina (2012 Data)

At the core of the Air Awareness program is the forecasting center, which produces the Air Quality Index (AQI) values used for daily air quality forecast and provides valuable information to the public. AQIs have been developed by EPA to correlate measured pollutant concentrations into numerical scales that are easier for the public to understand. Learn more about our air quality forecasts online at <https://deq.nc.gov/about/divisions/air-quality>

Figure 2: Ozone Trends in NC

Ozone (O₃) Trend In North Carolina (1990-2015)



The Air Quality Index (AQI) is a tool used to report levels of pollutants in the air to the public (Figure 6). AQIs are generated for ozone and particulate matter because these are the primary pollutants of concern in North Carolina. The AQI scale is divided into five color-coded categories, each corresponding to a different level of health concern ranging from green (good) to purple (very unhealthy). Greater AQI values correspond to greater concentrations of air pollution and indicate greater health danger.

Anyone can experience health effects – whether noticed or unnoticed – at air pollution levels of code red or above. In addition, certain “unusually sensitive” individuals can experience breathing problems even at code yellow levels. The following are defined sensitive groups by the EPA:

- All children due to the fact that they have a higher respiratory rate, their lungs are still developing and they are likely to be active outdoors. Children also have a higher rate of asthma.
- Older adults, because they are more likely to have undiagnosed heart or lung disease.
- Anyone with respiratory disease such as asthma or emphysema, and anyone with a heart condition such as coronary artery disease or congestive heart failure.
- Anyone who is frequently active outdoors.

The AQI forecast is a predicted number for an entire region that is based upon the data⁷ from local and national ambient monitoring systems. NC Air Awareness promotes the AQI forecast through DAQ and local program websites, partner websites, posters at schools, printed outreach materials, business/partner intranets and social media sites. It is distributed through local media (television, radio and newspaper) to the public. The AQI forecast gives the public important information about the next day’s air quality in their area, how their health may be affected and steps that may need to be taken to protect their health.

Figure 3: Air Quality Index

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.

EnviroFlash

Current air pollution information is available to the public 24 hours a day on DAQ’s website <http://www.ncair.org> or by calling 1-888-RU4NCAIR (784-6224). Additionally, forecast notifications can be sent directly to a cellular phone or email address, through a program called EnviroFlash.⁸ EnviroFlash is a collaborative effort between EPA and state and local agencies, such as DAQ. You can set up EnviroFlash notifications, based on your zip code, and receive notifications either daily or on action days⁹. <http://www.enviroflash.info/>

⁷ In total (SFY2015), DAQ has 40 ozone monitors, 21 PM_{2.5} monitors, nine sulfur dioxide (SO₂) monitors and three sites with nitrogen oxide (NO_x) monitors. The EPA operates monitors in North Carolina. Separate forecasts are issued for the Triangle, Charlotte, Hickory, Rocky Mount, Fayetteville and Asheville regions. Note: the Forsyth County Environmental Assistance Department issues air quality forecasts for the Triad region.

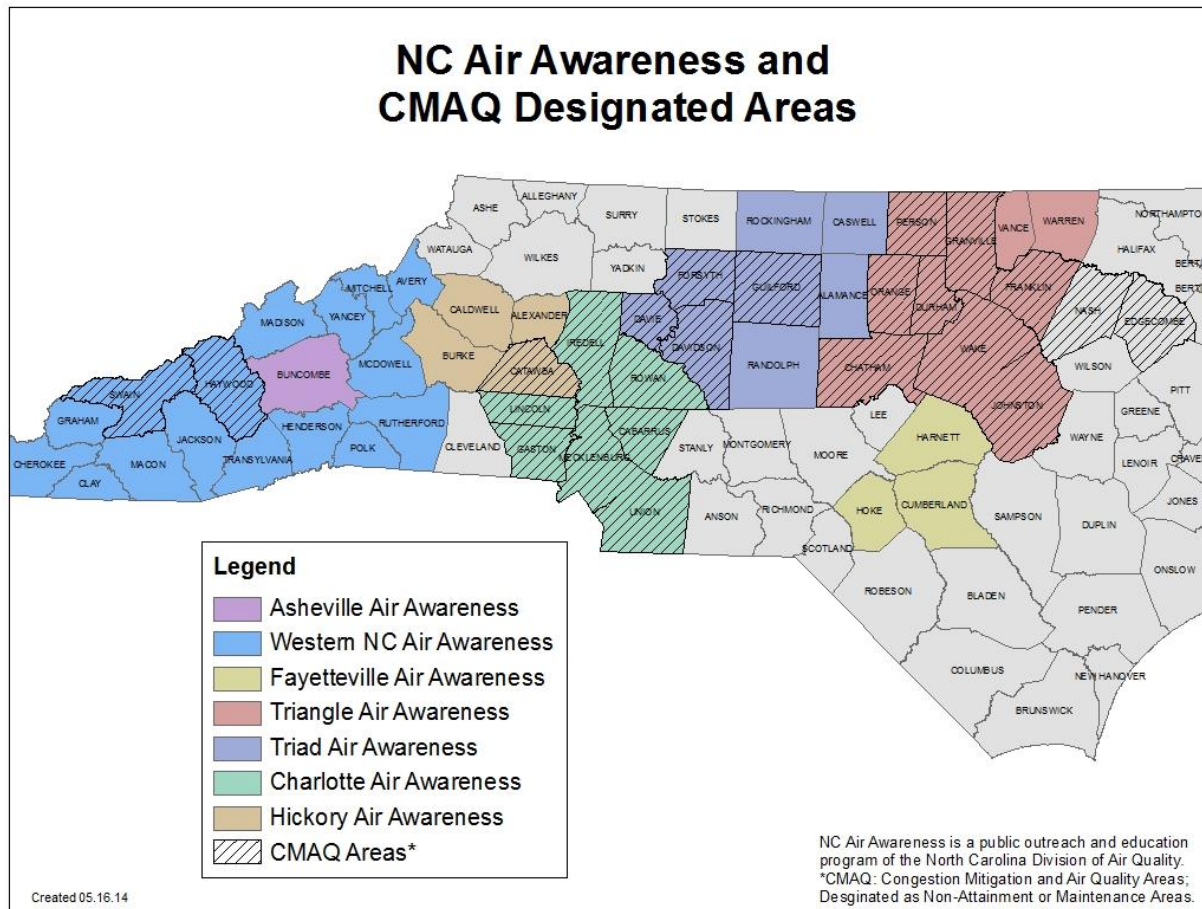
⁸ Enviroflash is a service of EPA- <http://www.enviroflash.info/>

⁹ Action days are issued when the AQI levels reach unhealthy ranges.

Program Organization

The NC Air Awareness program will continue working to reduce air pollution through voluntary efforts and improve air quality for NC citizens. This program not only informs North Carolinians about air quality but also encourages action to further improve air quality at a local level. Local air awareness coordinators, strategically located in or near metropolitan areas, provide outreach and education to students, the general public, businesses and organizations to teach them about ways to reduce their contributions to air pollution and how to protect their health. Figure 1 shows major metropolitan areas the program operates within. Some counties operate their own local program in concert with the states. Biographies and contact information for each of the local coordinators, along with key DAQ staff and partners, can be found in Appendix B. NC Air Awareness works to assist and help citizens in all 100 counties but concentrates efforts in areas outlined in Figure 1 because of current or historical air pollution problems. The program conducts the vast majority of outreach and education programs in core NC Air Awareness counties which are eligible CMAQ Areas marks in Figure 1.

Figure 4: NC Air Awareness Core Area + Extended Outreach Map



Since each region is different, the outreach efforts vary to best fit the needs of that region and partnership opportunities. This model of having local coordinators, staff, or a partner who can tailor messages and projects to the needs of a community allows for a more efficient use of resources and more impactful projects. Local coordinators also leverage specific local partnerships to maximize results either in education, community, or partnership focused activities to improve air quality. For example, in the Triangle area, the local coordinator utilizes NC Air Awareness mascots, “Clair –The Clean Air Explorer” and “CAM – the Clean Air Maniac”, who go to elementary schools and local events to teach people about air quality. This meets an identified need for increased air quality education for kindergarten through 5th grade (K-5) students. The program also developed a K-5 curriculum which is available for free in both English and Spanish (<http://www.ncair.org/airaware/edu/>). The

Charlotte Area Air Awareness program conducts outreach events for the public and encourages employees of local businesses to improve air quality through voluntary actions. Business coalition efforts have allowed for targeted campaigns designed to change commuter behavior of employees at those organizations. The Triad Air Awareness Coordinator provides air quality presentations to schools, universities, civic groups and employers. DAQ staff in the Asheville Regional office conducted more than 150 events for K-12 grade classrooms in the 2015 fiscal year.

Appendix B: Biographies

Biographies of local air awareness coordinator, NC Air Awareness Staff, and key partner staff who assist with programs

Robin Barrows

Robin.barrows@ncdenr.gov

(919) 707-8446

Ms. Barrows has worked for the NC Department of Environment Quality (DEQ), in the Division of Air Quality (DAQ) for eight years. She is currently in the Planning Section as the Supervisor of the Allied Programs Branch. The primary purpose of the Allied Program Branch is to: 1) operate the DAQ's point source emissions reporting program, 2) administer the North Carolina Air Awareness Program which conducts public outreach and education to reduce air pollution through voluntary and regulatory actions by individuals and organizations, 3) provide support on legislative matters related to DAQ operations, 4) provide management lead for implementation and compliance with Federal hazardous air pollutant requirements, and 5) perform activities related to greenhouse gases, energy, and climate change. She also makes recommendations to rule-makers regarding the outcome of projects, which result in legislative changes. Prior to becoming a supervisor, Ms. Barrows worked for the DAQ's Toxics Protection Branch, as an Environmental Senior Specialist. She has expertise in conducting risk assessments, performing exposure assessments for sensitive populations, analyzing emissions inventory and facility characterizations as related to exposure and risk assessments, and education and outreach development for community involvement. In her spare time she likes to train and compete with her dogs, garden, and spend time with her family and friends.

Jonathan Navarro; NC Air Awareness Team Leader

DEQ Division of Air Quality

jonathan.navarro@ncdenr.gov

(919) 707-8494

Jonathan Navarro, M.S. serves as an Environmental Senior Specialist with the NC Department of Environment Quality (DEQ), Division of Air Quality and as the team lead for the statewide education and outreach program- NC Air Awareness. Jonathan leads many of DAQ's outreach, communications, and marketing campaigns. He coordinates statewide efforts to reduce air pollution through voluntary efforts and specializes in education, communications and outreach. Additionally, Jonathan helps coordinate many partner efforts to reduce emissions and improve air quality. Jonathan is an accomplished professional with prior expertise in program management, marketing, environmental education, non-profit management, communications and outreach. His academic background includes both environmental science, geology, and a master's of science in environmental education. Jonathan has managed and served as an educator at children's museums and science education non-profits, and has been an educator in various settings for over 10 years. He also currently serves as the communications chair on the board of the Environmental Educators of North Carolina (EENC). Jonathan lives in Cary with his wife of 7 years and their two children. When Jonathan is not playing with his kids, you might find him hiking in the woods, at a local coffee shop or on a nearby tennis court.

Keith Bamberger; Asheville Air Awareness

DEQ Division of Air Quality

keith.bamberger@ncdenr.gov

(828) 296-4533

Keith Bamberger works for the Division of Air Quality out of the Asheville Regional Office of the Department of Environmental Quality. He has been working for DAQ since 2004 and his responsibilities include education and outreach to the 17 western counties of North Carolina. In that capacity, he works with close to 8,000 school-aged students a year, helping them understand that individuals are both the cause and solution to our air quality problems. Asheville Air Awareness also represents healthy air at an average of 15 events each year, focusing on cleaner cars and good energy use choices. He grew up working at the Kalamazoo Nature Center in Kalamazoo, Michigan, has a B.A. in sociology and anthropology from Kalamazoo College and a Masters Degree in Public

Affairs from Western Carolina University, is a Certified Environmental Educator from DEQ and received an Energy Management Diploma from NCSU in 2012. His past work includes nature centers, museums, the National Park Service and North Carolina 4-H, and currently serves as the Partnership Chair of the Environmental Educators of North Carolina. Following those principles, it is his goal to give the people tools to learn about how the world works and the connections between science and their lives.

Teresa Del P. Colón

DEQ Division of Air Quality

teresa.colon@ncdenr.gov

(919) 707-8436

Teresa Del P. Colón has been working for the NC Department of Environmental Quality, Division of Air Quality as an Engineer since 2003. Currently, she works as Environmental Educator and Outreach Specialist under the NC Air Awareness program. Her background includes a B.S. in Industrial Engineering from Polytechnic University of Puerto Rico, a B.A. with K-12 Spanish Teacher Certification from North Carolina Central University and a Certificate in Community Preparedness and Disaster Management from UNC Chapel Hill. She is currently pursuing her M.S. in Environmental Management. Before moving to the U.S., Ms. Colón worked with the Puerto Rico Environmental Quality Board, in conjunction with EPA Region 2, for the RCRA Hazardous Waste and CERCLA Superfund programs. In 1996 she moved to Raleigh and worked as a Spanish teacher from 1997 to 2002 with the Wake County Public System under the Lateral Entry Program. During this time, she also simultaneously taught through the Continuing Education program at Wake Technical Community College. Ms. Colón is a very active member of the Latino community.

Lorelei Elkins; Triad Air Awareness

ElkinsLT@forsyth.cc

Office: (336) 703-2449 / Cell: (336) 577-3567

Triad Air Awareness: Serving the 10 Counties of the Triad Region of North Carolina (Forsyth, Guilford, Davie, Davidson, Stokes, Surry, Alamance, Rockingham, Randolph and Caswell) We offer air quality presentations to schools, universities, civic groups, and employers on a variety of environmental topics as they pertain to air quality. (AQ 101, AQ and health, the science of atmosphere and air pollution, AQ and weather, energy conservation and alternative fuels, the 3Rs and how our daily choices impact air quality and the environment in general.) Our mission is to: "Educate and motivate North Carolinians to improve air quality for the protection and well being of the community, economy and environment." Lorelei has a B.S. in Environmental Science/Environmental Education and Masters work in Marketing.

Web: www.TriadAir.org

Facebook: www.Facebook.com/TriadAirAwareness

Twitter: www.Twitter.com/AirAwareness

Ashley Featherstone

Western NC Regional Air Quality Agency

ashley.featherstone@buncombecounty.org

(828) 250-6778

Ashley Featherstone manages the stationary source permitting and enforcement programs for the WNC Regional Air Quality Agency. The agency is a local air pollution control program that operates under an inter-local agreement between Buncombe County and the City of Asheville. The Agency is responsible for implementing and enforcing the provisions of the federal Clean Air Act and all additional state and local air quality regulations in Buncombe County. They offer compliance assistance, education and outreach services, maintain an indoor air quality hotline for citizen inquiries, and have partnered with other agencies to distribute free radon test kits and implement diesel retrofit projects. Ms. Featherstone has a BSPH in Environmental Science and Policy from UNC Chapel Hill and a MSPH in Environmental Health Sciences from University of South Carolina at Columbia. She

worked for an environmental consulting firm for three years before going to work for the local agency, where she has been employed for 13 years.

Web: www.wncairquality.org.

Facebook: <https://www.facebook.com/WesternNCRegionalAirQualityAgency>.

Twitter: <https://twitter.com/WNCAirQuality>

Anne Galamb

DEQ Division of Air Quality

anne.galamb@ncdenr.gov

919-707-8423

Anne Galamb has worked for the NC Department of Environment and Natural Resources, in the Division of Air Quality for 13+ years. She is currently an Environmental Specialist in the Mobile Sources Compliance Branch (MSCB) half time and also works half time for the Planning Section in the Allied Programs Branch. In MSCB, Anne primarily works administering air quality grants and she assists with air quality education and outreach as part of the Statewide Air Awareness Program in the Allied Programs Branch. Anne, a native of Canada, lives in Raleigh, NC with her husband, daughter and son. When not spending time with her family and friends, she likes to travel, walk with her Hungarian Vizsla, Willie, sing and read novels.

Elaine Loyack; Triangle Air Awareness

Elaine.Loyack@ncdenr.gov

(919) 707-8703

Elaine Loyack is Program Coordinator for Triangle Air Awareness, located in the Research Triangle Region and affiliated with the Division of Air Quality. She works with businesses and organizations to teach them about ground-level ozone, the air quality color code, ways to reduce their contributions to air pollution and how to protect their health. She also gets to have fun with the program's mascots, Clair, the Clean Air Explorer and CAM, the Clean Air Maniac, going to elementary schools and local events to teach about air quality. She has served as a panelist for a NC Plug-in Electric Vehicle Taskforce webinar series, the NC Annual Asthma Summit and the Wake County Asthma Coalition's Asthma Made Easy Conference. She currently co-chairs the Air & Waste Management Association's Outreach Program Committee for the 2015 Annual Conference and Exhibition. Prior to her work with Triangle Air Awareness, she held positions with Environmental Defense Fund and World Wildlife Fund, as well as owned her own business. Elaine has an M.B.A in Global Management from Thunderbird and a B.A. in Sociology with a minor in French from Wake Forest University.

Web: www.triangleairawareness.org

Facebook: TriangleAir

Twitter: @TriangleAir

Jennifer McHone Sides; Fayetteville Air Awareness

DEQ Division of Air Quality, Fayetteville Regional Office

jennifer.mchone@ncdenr.gov

(910) 433-3380

The Fayetteville Regional Office of the Division of Air Quality serves 11 counties in North Carolina (Anson, Bladen, Cumberland, Harnett, Hoke, Montgomery, Moore, Richmond, Robeson, Sampson and Scotland Counties). We also help serve several surrounding counties in our region to include Columbus and Lee. We offer presentations to schools, universities, civic groups, and festivalgoers on Air Quality issues as they pertain to North Carolina. One of DAQ's missions is to provide education and outreach to the citizens of North Carolina. Ms. Sides has a B.S. in Biology with a concentration in Environmental from UNC Pembroke. She has worked in the environmental field for 12 years; the last 8 with DAQ as an Environmental Sr. Technician working with the Ambient Monitoring Section and Outreach and Education in the Fayetteville Regional Office.

Kelly Smith; Charlotte Area Air Awareness

MCAQ@MecklenburgCountyNC.gov

(704) 336-5430

Kelly C. Smith is the Charlotte Area Coordinator for NC Air Awareness in the Charlotte Region ozone non-attainment area. Kelly received his B.A. degree in Chemistry from the University of North Carolina at Chapel Hill and his M.S. in Earth Sciences from the University of North Carolina at Charlotte. With NC Air Awareness, Kelly conducts outreach events for the public and encourages employees of local businesses to improve local air quality through voluntary actions. (Left position January, 2015)

Tara Onufrak; Charlotte Area Air Awareness

Tara.Onufrak@MecklenburgCountyNC.gov

(980)314-3373

Tara Onufrak is the Charlotte Area Coordinator for NC Air Awareness. Tara received her B.A. in Political Science from Virginia Tech, her Master of Environmental Law & Policy from Vermont Law School, and her J.D. from the University of South Carolina, School of Law. With Charlotte Air Awareness, Tara conducts outreach events for the public and encourages employees of local businesses to improve local air quality through voluntary actions. (Started position May, 2015. Replaced Kelly Smith)

John E. Wear; Unifour / Catawba Area Air Awareness

Natural Resources Administrator for the Western Piedmont Council of Governments

John.Wear@wpcog.org

(828) 485-4283

John joined the Western Piedmont Council of Governments (WPCOG) in November, 2006 as the Natural Resources Administrator and serves as the contact person for the Catawba County NC Air Awareness efforts. Prior to working at the WPCOG as planning staff, he worked as Town Planner for the Town of Troy, NC and Land Management Director for the Town of Spencer, NC. John has also worked as a Naturalist at Dan Nicholas Park in Rowan County and at the Indiana Dunes National Lakeshore in Indiana. His experience includes environmental planning and current and long-range planning in the Unifour area. He works as staff for the Unifour Water Resources Committee as well as research and outreach/education of water quality. Also he assists with the Unifour Air Quality Oversight Committee and Unifour Air Quality Committee, as well as conducting research and outreach/education of air quality through NC Air Awareness. Mr. Wear has completed or assisted with local comprehensive plans, as well as regional plans for both air and water quality. (Contract to operate Air Awareness program ended in 2015. WPCOG continues to be a partner of the NC Air Awareness program)

Appendix C: Business Coalitions and Partners Lists.

List below include active business coalition members or business coalition members active within one year of this report. The degree of participate in our NC Air Awareness programs varies by company and by region.

Charlotte Area Air Awareness

Allstate Insurance	Gaston Urban Area MPO
AlphaGary Corporation	General Dynamics Armament & Technical Products
Alta Planning + Design	General Steel Drum Corp.
American & Efird	Great Outdoor Provision Company
Barnhardt Manufacturing Company	Harper Corporation of America
Belk	Harris Teeter
Bissell Companies, LLC	Herff Jones
Cabarrus County	Iredell County Government
Cabarrus Health Alliance	Lance, Inc.
Carolina Raptor Center	List USA, Inc.
Carolinas HealthCare Systems	Little Diversified Architectural Consulting
Catawba College Center for the Environment	Lucile Tatum Extension Homemakers Club
Catawba Regional Council of Governments	Mallard Creek Polymers
CB&I	Mecklenburg County
CCL Label	Mecklenburg County Park and Recreation
Centralina Council of Governments	Mecklenburg EMS
Charlotte Mecklenburg Schools	Moore & Van Allen
Charlotte Pipe and Foundry Co.	National Gypsum
Choice Translating	NewDominion Bank
City of Charlotte	Okuma America Corporation
City of Concord	Patriot Clean Fuel
Clean Air Carolina	Propst Bros. Dist., Inc.
Cleveland County Asthma Coalition	PSNC Energy
CLT Air Freight	Resolute Forest Products
Coca-Cola Bottling Co. Consolidated	Rexam Incorporated
Daimler Trucks North America	Safe Routes to School National Partnership
Davidson College	Sherpa
Duff - Norton	Shift Equity
Duke Energy	Stanly County
FAS Controls	The Creative Group
Firestone Fibers & Textiles Company	The Lane Construction Corporation
First Flight Bicycles	The Lawrence Group
Flextronics	UNC Charlotte
FMC - Lithium Division	URS
Frito-Lay	Valspar
Gaston County	York Technical College

Triad Air Awareness

A & T University	Martin Marietta Materials, Inc. - Salem Quarry
Advance Energy	Meredith Printing and Publishing
Akzo Nobel	Microfibres, Inc.
Alamance Burlington School System	Modern Toyota
Alamance County	Moses Cone Medical Center
Alamance County Community College	NC Baptist Hospital, Inc.
Amcase, Inc.	News and Record
American Snuff Company, LLC	North Carolina School of the Arts
Americraft Carton Group, Inc.	North Carolina Solar Center
Branch Bank and Trust	Pepsi Cola Corp.
Caswell County	Piedmont Authority for Regional Transportation
Caterpillar, Inc.	Piedmont Aviation Component Services
CEMEX Construction Materials Atlantic, LLC - Lowery Street Plant	Piedmont Environmental Alliance
Central Carolina Concrete	Piedmont Triad Council of Governments
Cherry Precast	Powerlab, Inc.
City Greensboro	Precision Concepts Group, LLC
City of Burlington	Prestige Concrete - Kernersville
City of Elon	R. J. Reynolds Tobacco Company
City of High Point	R. J. Reynolds Tobacco Company
City of Lexington	R. J. Reynolds Tobacco Company
City of Mebane	R.J. Reynolds Research and Development
City of Reidsville	Randolph County
City of Winston-Salem , Muddy Creek WWTP	Ready Mixed Concrete Company - Rural Hall
City of Winston-Salem, Archie Elledge WWTP	Ready Mixed Concrete Company - Winston Downtown
Classic Packaging	Red Birch Energy
Corning Cable Systems, L.L.C.	Rexam Beverage Can Company
Cremation Services	Rock Tenn Merchandizing Displays
CRES Tobacco Company, Inc.	Rockingham County
Custom Wood Products	Rock-Tenn CP, LLC
Custom Wood Products of Rural Hall, Inc.	Salem Academy
Davidson County	Salem Energy Systems, LLC
Davidson County Community College	Sam's Club
Davidson County Schools	Sara Lee Corporation
Davie County	SciWorks Science Center and Environmental Park
Davie Life YMCA	Siemens WSC
Deere Hitachi	Sonoco Corrflex
Douglas Battery	Speer Ready Mix Concrete
Duke Power	Stokes County
Ellwood Advanced Components	Stokes County Senior Services
Elon University	Storopack, Inc.
Energy United	Stratford Metal Finishing
Forsyth County	Structural Steel of Carolina
Forsyth County Cooperative Extension office	Titan America
Forsyth Medical Center	Town of Kernersville
Forsyth Memorial Hospital	Town of Mocksville
Forsyth Technical Community College	Town of Oak Ridge
Fulton Family YMCA	Town of Walkertown
Gallins Food & Family Farm	TRANSFLO Terminal Services, Inc

Gateway YWCA	Unifirst Corporation
Goodwill Industries	University of North Carolina - Greensboro
Greensboro Children's Museum	VCNA Prestige Concrete Products Inc.
Greensboro Science Center	VF Corporation
Greensboro Transit Authority	Village of Archdale
Guilford College	Village of Bermuda Run
Guilford County Schools	Village of Jamestown
Guilford Technical Community College	Village of Lewisville
Habitat for Humanity Forsyth	Vulcan Materials
Habitat for Humanity Guilford	Vulcan Materials Company - East Forsyth Quarry
Hanes Brands	Vulcan Materials Company - North Quarry
Hanes Dye & Finishing Company	Wake Forest Baptist Medical Center
Hanes Mill Road Sanitary Waste Landfill	Wake Forest University
Hartley Ready Mix Concrete, Inc.	Wake Forest University Health Sciences - A1 (Richard H. Dean Building)
Hayworth-Miller Funeral Home, Inc.	Wake Forest University Health Sciences - PTCRC
High Point Enterprise	Waste Management of the Carolinas
High Tran	Wesley Long Hospital
Highland Industries	WFDD 88.5
Highland Industries, Inc.	WFMY TV
Holcim (US) Inc.	WGHP Fox 8
Hutchison-Allgood Company	Winston Printing Company
Ingredion Incorporated, Winston-Salem Plant	Winston Printing Company
Johnson Controls, Inc.	Winston Salem Children's Museum
Kernersville Medical Center	Winston Salem State University
Kernersville YMCA	Winston United Unitarian Universalists
Krispy Kream	Winston Weaver Company, Inc.
Larco Construction	Winston-Salem State University
Loflin Concrete Company, Inc.	Women's Hospital of Greensboro
Loflin Concrete Company, Inc.	WSJS Radio
Longworth Productions	WXII TV
Lorillard Tobacco	Yadkin Valley Paving, Inc.
Lyndon Steel Company, LP	Martin Marietta Materials, Inc. - Salem Quarry

Triangle Air Awareness

ABC11	Leadership North Carolina
Abt Associates, Inc.	Mechanics and Farmers Bank
Active Ergonomics, Inc.	NC Asthma Program
Advanced Energy	NC Asthma Program
Advanced Transportation Energy Center, NC State	NCSU Economic Development
AK Environmental, LLC	NCSU Transportation
AVANT Group, LLC.	Neuse Riverkeeper® Foundation
BCBSNC	NIEHS
BD Technologies	North Carolina Central University
BHHS York Simpson Underwood	Prudential York Simpson Underwood Realty
Blue Cross and Blue Shield of North Carolina	Quintiles
Brasco Design+Marketing	Regional Transportation Alliance
Burroughs Wellcome Fund	Research Triangle Foundation
CA Technologies	Research Triangle Regional Partnership
Capital Group Sierra Club	ResMed

Carolina Solar Energy	RTI International
Christina Motley LLC / CMO For Hire	SE Climate Science Center
Cisco Systems, Inc.	Self Help
Citizens Climate Lobby	Sensus
City of Raleigh	ShareFile/Citrix
City of Roxboro	Sig Hutchinson Communications
Clean Air Carolina	South Durham Farmers' Market
Ctiy of Roxboro	Syngenta
Delta Dental of North Carolina	Tetra Tech
Duke Medical Center	The Conservation Fund
Duke University	The Ogden Group
Duke University Health System	Time Warner Cable News
Duke University Nicholas School of the Environment	Town of Apex
Durham City-County	Town of Cary
DWM Advisors, LLC	Town of Cary - Cary Transit
DWM Foundation Triangle Commuter Bike Initiative	Town of Chapel Hill
EcoCAR2 at NCSU	Town of Wake Forest
Economic Development Partnership of North Carolina	Triangle Clean Cities Coalition
Education Services International Inc.	Triangle Green Homes
Everidian, Inc.	Triangle J Council of Governments
Fiberactive Organics, L3C	Triangle Transit/GoTriangle
Franklin County	UNC Institute for the Environment
FREEDM/NC State	UNC Institute for the Environment
GEI Consultants, Inc.	UNC Kenan-Flagler Business School Center for Sustainable Enterprise
Girl Scouts	URS
GlaxoSmithKline	US Environmental Protection Agency
Glen Cove	Vidant Medical Center
GoTriangle/Triangle Transit	Wake County Commission
HealthFitness @ Cisco	Wake County Public Libraries
Heart of Cary Association	WakeUp Wake County
IBM	Waste Reduction Partners
Johnson & Johnson	WNCN NBC-17
JPB/CPA	WRAL-TV
Kidzu Children's Museum	Yadkin Bank
LANE Construction	

Central Office Know the Code! Partners

AARP- North Carolina
Area Agencies on Aging (11)
Asthma Alliance of North Carolina
Clean Air Carolinas
NC Senior Games
North Carolina Association on Aging
North Carolina Council of Churches
North Carolina Cooperative Extension
North Carolina Division of Aging and Adult Services
North Carolina Division of Public Health
University of North Carolina at Chapel Hill Institute for the Environment